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The K-12, Postsecondary, and Labor Outcomes of the Texas Migrant Student Population

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The K-12, Postsecondary, and Labor Outcomes of the Texas Migrant Student Population

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Abstract

The K-12, Postsecondary, and Labor Outcomes of the Texas Migrant Student Population

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Abstract: The children of migrant workers are one of the most marginalized populations in the United States. Instability and poverty impact many aspects of most migrant students' lives, especially education. The federal Migrant Education Program (MEP) provides educational support to migrant students. Federal funding is administered to state educational agencies to manage state Migrant Education Programs. The goal of these programs is to ensure that migrant students graduate high school and are prepared for higher education and the workforce. Texas has the second largest population of migrant students in the United States and spends about $50 million annually on the Texas Migrant Education Program (TMEP). There has been limited evaluation of outcomes following participation in the TMEP (or in the MEP in general) and no research regarding labor outcomes of former migrant students has been conducted.

The purpose of this study is to estimate how different educational and post-schooling outcomes of Latino students eligible to participate in the TMEP differ from

those of the non-migrant Latino student population, controlling for various factors. The educational outcomes studied include total and chronic absenteeism, SAT score, odds of enrollment in a STEM major, and degree level awarded from public universities, career and technical schools, and community colleges. The primary labor market outcomes investigated are wages and odds of participating in the agricultural industry. OLS regression, logistic regression, ordered logit, zero inflated Poisson regression, and panel data with fixed effects are used. Changes in migrant students' eligibility for services allows for an estimation of the intent-to-treat effect of the TMEP.

Results of the study suggest that a gap exists between outcomes for the Latino migrant and non-migrant population. Currently, the services the TMEP is able to provide with a small working budget do not bridge the human capital gap associated with systemic inequities faced by migrant students. Outcomes suggest that a revitalized Migrant Education Program with more sufficient resources to deliver more effective and consistent services across school districts may enable migrants to pursue the same opportunities as their non-migrant peers. Implications for theory, policy, and future research are discussed.

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Chapter 1: Introduction

The children of migrant workers often experience difficulties beyond those of non-migrant immigrants or children living in poverty. Migrant or seasonal workers travel between cities, states, and countries following employment in temporary and cyclical industries such as agriculture, logging, fishing, or manufacturing (Lynn & Malinowska, 2018). The migrant lifestyle is marked by adversity; workers and their families often endure severe hardships, including below-minimum wage pay, exploitation, inferior housing, long hours in extreme temperatures, and working with hazardous chemicals such as pesticides (Whittaker, Salend, & Gutierrez 1997; Kandel 2008; Mehta et al. 2005).

Migrant children may face long-term social consequences; among the most pressing is limited access to education (Branz-Spall et al., 2003; Martinez & Cranston-Gingras, 1996). As migrant children move with their families in pursuit of employment, little opportunity is left to consider the school calendar. Garza, Reyes, & Trueba (2004) found families may give schools no notice when their children move several times a year. Schools do not always forward student records timely or appropriately, resulting in grade level misplacement. Gradually, migrant students find themselves behind and become less motivated to continue (Garza, Reyes, & Trueba, 2004). Working alongside their parents offers an immediate source of income and 50% of migrant students drop out of school (Green, 2003). Apart from frequent school interruptions and financial barriers to education, migrant children suffer from extreme poverty, dismal health, and low English proficiency, leading to school and societal isolation (Garza, Reyes, & Trueba, 2004; Zalaquett, McHatton, & Cranston-Gingras, 2007; Ramirez, 2012). Most migrant workers in the US come from rural areas of Mexico, where they may have only attended elementary or middle school (Gibson & Bejinez, 2002). Many students are immigrants themselves, although others were born in the US or

arrived while they were still young (Gibson & Bejinez, 2002). However, the majority of students are U.S. citizens.

In order to meet the educational needs of migrant students, President Lyndon B. Johnson created the Migrant Education Program (MEP) in 1966 as part of the War on Poverty. This program, included in the *Elementary and Secondary Education Act* (ESEA), is a federally funded plan that provides services to migrant children (U.S. Department of Education, 2012). In 2013-2014, there were 347,634 students eligible for MEP services and the federal government spent $364,751,000 (U.S. Department of Education, 2015). In addition, each state coordinates its own migrant education program based on federal funding which is allocated to each state's educational agencies (SEAs). This dissertation proposal highlights the Texas Migrant Education Program (TMEP), which was initiated in 1966 under Title I of ESEA (Clements et al., 2011).

STATEMENT OF THE PROBLEM

The purpose of the TMEP is "to design and support programs that help migrant students overcome the challenges of mobility, cultural and language barriers, social isolation, and other difficulties associated with a migratory lifestyle. These efforts are aimed at helping migrant students succeed in school and successfully transition to postsecondary education or employment" (Texas Education Agency, 2010). However, minimal research has been done that measures the long-term school and labor force outcomes of students who were enrolled in or eligible for the TMEP (and more broadly, literature is lacking on MEP programs in general). Most of the studies previously conducted are small-scale qualitative studies and often limited to one school (which are discussed in the literature review). The limited evaluation of student outcomes following enrollment in (or eligibility for) the TMEP leaves many students at risk. To date, no studies on labor outcomes of

historically migrant students have been conducted. This information is crucial in order to understand how eligibility or participation in the TMEP impacts long term opportunities.

This study aims to assess longitudinal outcomes for Latino TMEP students compared to both Latino non-migrant students and Latino migrant students when they were not eligible for the TMEP. The study focuses on the Latino population since 98% of TMEP students are Latinos. These results may generalize to MEP programs nationwide for the Latino population.

RATIONALE

U.S. migrant students make up only about 7% of the total K-12 student population (U.S. Department of Education, 2015). At the intersection of being majority Latino, high poverty, having English as a second language, they are arguably the most marginalized group of students in the US; a transitory lifestyle compounds the challenges that migrant students face, increases barriers to success, or makes breaking the cycle of poverty even more unattainable. The U.S. MEP is the only government-run program specifically designed to provide services for migrant students. Current evaluations of the program fail to encompass postsecondary and labor outcomes for migrant students and only capture K-12 outcomes to a limited degree. Therefore, it is not possible to determine whether the TMEP meets their goal of "helping migrant students succeed in school and successfully transition to postsecondary education or employment" (Texas Education Agency, 2010). An evaluation of how the TMEP impacts migrant students is important because the program may be the only source of social services that migrant students receive and these crucial types of support can mean the difference between successfully completing postsecondary education or a life of field work and poverty. It is estimated that many of 350,000 migrant students will inherit their parent's occupation and lifestyle (National Commission on Migrant Education, 2006; Mehta et al. 2000).

Texas is an important case study for the MEP program; it has the second largest number of migrant student participants (after California) and has the second highest expenditures (U.S. Department of Education, 2013). For 2012-2013, there were 48,621 eligible migrant students in Texas and 36,385 (or about 75%) of migrant students participated in the TMEP (U.S. Department of Education, 2013). For fiscal year 2014, Texas spent $58,218,323 on the TMEP (U.S. Department of Education, 2013), roughly $1600 per participating student. Texas receives grant money from the federal MEP, which had a budget of $364,751,000 to serve 347,634 migrant students in 2014, averaging about $1050 per student (U.S. Department of Education, 2015). Ninety-eight percent of migrant students in Texas are Latino students. By comparing migrant students to the general student population, it would be assumed that the MEP/TMEP has the same affect on Latino students as it does on non-Latino students. Since Latino students face different challenges than non-Latino students, the sample considered in this study only focuses on Latino migrant and non-migrant students. Furthermore, 98% of the population of TMEP students are Latino. There has been no evaluation of program outcomes or whether the MEP is meeting the needs of migrant students, which are essential to determining whether the program is an effective use of taxpayer resources.

RESEARCH QUESTIONS

This study aims to assess long-term outcomes of Latino migrant students and compare non-migrant Latino students. Additionally, the study strives to measure whether the eligibility and participation in the TMEP has impacted migrant student outcomes. Specifically, the study is guided by the following questions:

1) Does participation in the TMEP compensate for disadvantages faced by Latino migrant students?

2) Do Latino TMEP participants fare better or worse compared to the non-migrant Latino student population? What explains these differences?
3) Does program eligibility or participation improve academic or labor market outcomes?

THEORETICAL FRAMEWORK

While many theories can help explain student achievement, mobility, postsecondary persistence, and labor outcomes, Human Capital Theory (HCT) provides an encompassing framework that links education to labor outcomes. The MEP aims to assist migrant students' transition into higher education and the workforce; HCT highlights skill-developing features central to the program and their importance for success in the labor market.

Human capital is generally defined as the practical knowledge, acquired skills, and learned experiences that make individuals productive at work and in society. Human capital may be measured as education and is often acquired through the institution of school (Perreria et al., 2006). The theory was first proposed by Adam Smith in 1776 and explained as

> …the acquired and useful abilities of all the inhabitants or members of the society. The acquisition of such talents, by the maintenance of the acquirer during his education, study, or apprenticeship, always costs a real expense, which is a capital fixed and realized, as it were, in his person. Those talents, as they make a part of his fortune, so do they likewise that of the society to which he belongs.

Smith (1776) suggested that humans could be conceptualized as a capital investment in economic growth (Baptiste, 2001; Little, 2003; Woodhall, 1987). He argued that education would result in greater productivity and higher income; the market would reward those that invested in the development of their skills and talents through education. Society would also benefit in the long run from greater education as economic growth depends on the amount of investment in education. Irvin Fisher (1906) reinforced this argument when he described people as capital when they invested in their skills, future working potential, and productivity.

HCT rose to prominence in the U.S. in the 1960s. Theodore Schultz (1961) and Gary Becker (1964) from the Chicago School greatly contributed to its development and theoretical significance. Schultz (1961) argued that investment included all measures aimed at improving ability and productivity, such as the costs of education, forgone earnings, health, migration, and opportunity cost of free time. Investment, according to Schultz, was an intentional acquisition of skill, and educational investments were considered as expenditures.

Becker (1964) was one of the first to connect human capital to education and labor outcomes; he proposed a theory that established relationships between educational attainment, income, and economic growth. Becker observed different rates of return to education in future earnings across different ethnic groups and noted that educational investment, dependent on resource availability and other factors, was a mode of socioeconomic mobility. His studies made the case that more highly educated and skilled persons tend to earn more than others, which held true in both developed and developing countries. Moreover, inequality in the distribution of earnings was found to be tied to inequality in education.

Becker and Schultz were the first to apply cost-benefit analysis to HCT (Little, 2003). They noted that education had costs and benefits to both the individual and to broader society; their conceptualization included private cost of education in terms of fees and opportunity cost, public cost associated with subsidized education, private benefit through future earnings, as well as the public benefit of educated individuals who contribute to a society's overall economic productivity (Woodhall, 1987).

Psacharopoulos (1973, 1981) studied the private and social rates of return for primary, secondary, and higher education in less developed, intermediate, and economically advanced countries. His research confirmed his preconceptions that based on the earnings of workers,

spending on education was a profitable investment for both the individual and for society, although he found it was better to invest in human capital in developing countries than developed ones.

Until the rise of HCT, Keynesian economics argued that education was a private commodity, and if education could improve an individual, then that individual should bear the costs (McFayden, 2006). HCT brought a reasonable argument for government investment in an educated society.

Other Perspectives and Assumptions

The development of human capital theory was met with a variety of perspectives, reactions, and critiques. John Stuart Mill and Alfred Marshall were offended by the notion that humans could be treated as capital. They preferred to distinguish between human beings themselves and capital as the capacities that included skills and knowledge (McFadyen, 2006). Karl Marx argued that while investment in education may lead to higher earnings, the cost of education should also be considered in the context of capitalist economies. To Marx, the ability to work was not capital, but that it became capital when used in the process of production (Baptiste, 2001).

In the 1980s, the salience of HCT began to waver. Although educational attainment increased, there was growing income inequality, particularly in developing countries (Baptiste, 2001; Heidemann, 2000; Vandenberghe, 1999). This called into question the role of other variables than human capital in economic production and welfare. New models emerged including the screening hypothesis and signaling theory (Spence, 1973). The screening hypothesis proposed that education acts as a screen or filter in scenarios where one economic agent attempts to learn as much as possible about another in a transaction. Education becomes a useful filter not because of the skills and credentials acquired through education, but because the person is signaling to their employer that they have learned punctuality, submission to authority, or motivation. Signaling

theory proposed that through the accumulation of education the employees signal to their future employer their potential skills and abilities.

Critics of HCT question the assumption that a distinct relationship exists between education and economic performance (Diebolt, 2004; Little, 2003; Vandenberghe, 1999; Woodhall, 1987). HCT makes various assumptions about the nature of economics, human nature, and educational systems. It also argues that social inequities are inevitable outcomes of the free market instead of products of exploitation or systemic injustice. Evidence, meanwhile, points to structural inequities that result in unequal power along lines of race, class, and gender, thereby leading to discrimination, segregation, and privilege for select members of society (consistent with critical theories, such as Critical Race Theory; see Baptiste, 2001; Little, 2003). For example, access to (or membership in) certain institutions may be due to favors or social networks. Better-paid positions may be given to those who are less educated or less experienced due to personal connections. Another argument may be that social connections provide a type of filter which allows acts as an indicator of an individual's personal characteristics or skill quality. Evidence that socioeconomic background and race greatly impact neighborhood, schools, vocational training, and workforce options points to another gap in HCT (Coleman et al, 1966; Hanushek, 1986).

According to McFayden (2006, p. 37), modern day HCT synthesizes three theoretical features: "First, it integrates technology as a factor that mediates the relationship between human capital and productivity; second, it adds elements of the screening hypothesis; and third, it advocates private rather than public investment in education" (McFayden, 2006 p. 37). This perspective, tempered by critiques, is employed in the present analysis.

The understanding of human nature is limited within HCT. Humans are viewed as logical, steadfast, competitive, and driven solely by material consumption (Baptiste, 2001; Diebolt, 2004).

Meanwhile, human desires are ever changing, and greatly impacted by variables such as the environment, politics, as well as social justice (Baptiste, 2001). Within education, consumers do not all have the same needs, contrary to the assumptions of a market driven, capitalistic orientation, economic, political, and environmental changes shape expectations.

Education systems, regardless of intent, may fail to properly train and prepare students for the labor force. Many stakeholders are invested in education beyond administrators, teachers, and students, including the federal and state government, the local community, the private sector, and non-governmental entities. Politics, bureaucracy, and individual desires fracture the stability of the system. Variations in goals, policy outcomes, and measures of success may result in variations in the quality of education. While some students are well prepared for the labor force through their education, others who require additional investment, such as special-education students or limited English proficiency students, are left behind. Corporate involvement in education creates an expectation of investment and profit.

The MEP was created as a means of investing into a marginalized population of students through education. The underlying philosophy of the program is that human capital development will raise student achievement. However, for the migrant student population, other factors not considered by HCT come into play, including mobility, poverty, language, and race. In order to raise migrant student achievement and improve future outcomes such as wages, there must be a careful evaluation of the types of services migrants receive. At this point, limited evaluation has been conducted. In the present course of study, HCT is used to explain the importance of developing education and skills in migrant students in order to compete in the labor market and leave the cycle of poverty.

Chapter 2: Literature Review

The purpose of this literature review is to examine published studies on the migrant student experience from primary education through the university level in regards to the federal MEP and TMEP, as well as to assess labor outcomes (in terms of wage and industry classification) to determine whether migrant students were able to leave the agricultural industry. This review highlights current knowledge in migrant student postsecondary and labor outcomes and draws attention to the gaps within the extant research. Understanding of these topics also requires consideration of literature on the living standards and mobility of migrant students, the impact of migration on primary and secondary school, as well as the role MEP plays in fostering and hindering opportunities for students.

Based on the literature, I identified four main topics of study: Migrant Education Program factors, the migrant student experience, continuation and success in higher education, and the labor market. The studies I evaluated for the literature review consist primarily of qualitative research, including interviews, observations, narratives, and surveys. Some quantitative studies were conducted, including important longitudinal research. The scholars cited used an array of methods such as Propensity Score Matching, OLS Regression, Chi-Squared, and ANOVA. I identified 140 pieces of work for the literature review.

THE FEDERAL MIGRANT EDUCATION PROGRAM

The federal MEP and Texas MEP play a significant role in the school experience and labor opportunities of migrant students. Program factors such as eligibility requirements, funding availability, service provisions, and identification and recruitment determine the services that migrant students have access to, as well as educational opportunities and life outcomes. MEP

services are typically the primary source of assistance students receive. The following chapter reviews literature on the MEP, TMEP, as well as on the lives, educational experiences, and potential labor outcomes of migrant students.

The Migrant Education Program is the primary federal program in the United States that provides services to migrant students. The purpose of the MEP is to ensure that migrant children receive the same public education provided to other children (U.S. Department of Education, 2010). According to Section 1301, Part C of the ESEA, providing special educational programs for migratory children accomplishes several goals. First, it reduces the educational disruption and other problems that result from repeated moves. Secondly, it ensures that migrant students are not penalized for disparities among states in curriculum, graduation requirements, or academic content. Finally, it prepares them to make a successful transition to postsecondary education or employment, including graduating with a high school diploma or a GED.

Funding

The U.S. Department of Education (2010) states that in order to receive funding from the MEP, each State Education Agency (SEA) applies for a grant from the MEP. The amount of funding that each state receives is based on a funding formula[1] and the federal budget allotted by Congress. The amount actually appropriated by Congress is less than the budgeted amount. Therefore, the allocation is the total amount allocated by Congress divided by the national total generated by the formula.

Federal funding for services depends on the number of children who are recruited and identified as either priority or targeted children (Hanley & Melecio, 2004). Services are prioritized

[1] The amount of funding that is supposed to be provided is equal to: the State's FY 2002 MEP allocation, plus an

for the children most at risk for failing each state's academic standards and for children whose schooling has been interrupted by migration (Hanley & Melecio, 2004).

Migrant education services vary between schools, districts, and states. Some areas offer only limited programs; other areas fail to offer any opportunities at all. Perry (1997) discusses how each SEA works with grantees to develop annual plans which may change according to the needs of the population. The funding from the program can be allocated for a variety of services, including summer, after school, and weekend programs, staff, health services, and programs for parent involvement. Districts are given leeway in determining practices and providing services for students. Variations in funding may be a key reason for discrepancies in services. The number of migrant students also plays a role. Districts with fewer migrant students may not provide services.

Program Spending

Data from the U.S. Department of Education (2015) reports that for fiscal year 2014, the U.S. government spent $364,751,000 on the MEP and 347,634 migrant students were eligible for services in the 2013-2014 school year. Over the last several years there has been about a 5% rate of decline per year for migrant student participation; the Texas Education Agency conducted a study examining this and concluded that the "decline in the number of students likely can be attributed, at least in part, to changes in the federal TMEP qualification requirements and the economic downturn or recession in the economy requiring fewer migrant workers" (Clements et al., 2011 p. 22). Furthermore, the study determined that while migrant students may be eligible to participate in the MEP, only about 67% of students actually participate (Clements et al., 2011). While no studies have explicitly focused on migrant student non-participation, literature indicates that about one-third of students do not participate in the program because of the high opportunity cost of attending school as compared to working, threats from employers who do not want migrant children

integrating in schools (Millard, Chapa, & McConnell, 2004), and lack of program availability. According to a Migrant Program Specialist, "legal requirements do not require that every migrant child identified is served" (Office of Migrant Education, personal communication, December 2015).

Migrant Student Eligibility

The MEP cites strict guidelines for migrant eligibility. A migrant student must be under 22 years old, and have migrated with family, or individually, for temporary, seasonal agricultural or fishing work, across school district boundaries (or administrative boundaries in a large school district), within the last 36 months (U.S. Department of Education, 2010).

Additionally, the U.S. Department of Education provides leeway to interpret migrant eligibility in a strict or flexible manner (Hanley & Melecio, 2004). This allows states to make their own eligibility determinations that may result in families being eligible in one state, but not another (Hanley & Melecio, 2004; Texas Education Agency, 2010). Developing common eligibility requirements across states without the need to reexamine students could greatly expedite educational services and lower administrative costs.

Identification and Recruitment

District representatives are required to identify and recruit migrant children not enrolled in the MEP, inform their families about options, check for eligibility, and issue Certificates of Eligibility (COEs) (Texas Education Agency, 2010). Recruiters interview families about reasons for migration and determine eligibility for migrant services. Migrant families are not asked questions regarding their immigration status, nor are they asked for social security numbers or proof of residency. The necessary documents required for a COE include basic demographic data, information related to a family's movement, and the type of work undertaken. However, Hangley

and Melecio (2004) specify that in order to secure the COE, a migrant family must work closely with the recruiter, trust the recruiter, and provide them with specific information. States institute different levels of training for recruiters and some have only minimal guidance. Migrant families may feel discouraged from participating if it is not clear that their immigration status will not be documented or reported, or that migrant students legally cannot be denied education based on their immigration status (Hangley & Melecio, 2004).

There are few comprehensive evaluations of the MEP, and most are over ten years old.[2] Although data is provided on achievement, dropout, program type, and the location of migrants served, these publications fail to evaluate the program itself, including whether the types of services offered have an impact and degree of that impact. There appear to be few considerations of potential changes that need to transpire on a program level and migrant dropout and achievement indicate this. According to the U.S. Department of Education (2015), levels of dropout and achievement have remained mostly constant for at least the last 10 years. Access to the New Generational System – a database that includes individual level data on migrant variables – is not accessible for public analysis or program evaluation. In fact, no evaluation has been conducted (Rosie Garza, MEP - TEA, personal communication, December 10, 2014).

Elementary and Secondary Education Act

Pappamihiel (2004) conducted a report, which introduced and discussed the evolution and reauthorization of the Elementary and Secondary Education Act (ESEA) since it was first authorized in 1965. With the reauthorization of ESEA about every five years, many programs have come and gone, however, funding for migrant education remains stable. Over time the migrant

[2] The available studies include: U.S. Department of Education, 2006; U.S. Department of Education, 2004; "State Title I Migrant Participation Information", 2002, 2004a; U.S. Department of Education, 2003; U.S. Department of Education, 2002a; and U.S. Department of Education, 2000.

program portion of ESEA has grown to include preschool migrant children in 1972 and parental advisory councils in 1978. In 1988, the age range during which migrant children could receive funds was extended from 5 – 17 years old to 3 – 21 years old. One of the greatest changes in migrant education has been the evolving definition of what constitutes a migrant student and the counting of migrant students. The reauthorization of ESEA in 1994 restricted migrant eligibility from students who made a move every 6 years down to 36 months. Also in 1994, eligibility was extended to include spouses and in 2002, eligibility began to include independent migrant children, no longer dependent under parents. In 2008, eligibility excluded the requirement of agriculture or fishing employment as the principal means of livelihood. In 2008, the reauthorization included attrition rate studies. Accountability became a central issue in migrant student education since NCLB was enacted in 2001. MEPs were asked to monitor migrant student progress and to make sure they passed state assessment exams. For many migrant students who missed state exam preparation due to migration, this added an additional hurdle to graduation. Students who had finished classwork but had not taken an exit exam would not be able to graduate, sometimes resulting in dropout. The No Child Left Behind Act (NCLB) modified MEP funding as well as accountability. Up until 2002, states would receive funding based on "the product of each states' share of migratory students and a fraction of its per-pupil expenditure (PPE)" (Kuenzi, 2002 p CRS-4). From 2003 forward, states would receive the same amount of funding as in 2002, "plus an appropriation amount equal to the number of migrant children multiplied by 40% of the average PPE in the state… the formula for distributing appropriations over the FY2002 level uses an unadjusted count of the number of migratory children residing in the state during the previous year plus the number receiving services under the MEP in summer or inter-session during the previous year" (Kuenzi, 2002 p CRS-4, 5).

In December 2015 Congress reauthorized ESEA as the Every Student Succeeds Act. According to the Every Student Succeeds Act (2015). Title 1 Part C, Education of Migratory Children was amended in some basic ways including changing the purpose of the MEP from…

> Support high-quality and comprehensive educational programs for migratory children in order to reduce the educational disruption and other problems that result from repeated moves (SEC. 1301. Education of Migratory Children)

to:

> To assist States in supporting high-quality and comprehensive educational programs and services during the school year and, as applicable, during summer or intersession periods, that address the unique educational needs of migratory children (SEC. 1301. Education of Migratory Children).

Further, the ESSA added that the MEP will connect migrant children and their families to programs and projects such as education, health, nutrition, and social services.

Finally, the requirement that migrant workers quickly engage in migrant-eligible employment after a move (usually within 30 days) has also relaxed. The ESSA now specifies that an individual is considered a migratory agricultural worker if the individual actively sought new employment and has a recent history of moves for temporary or seasonal agricultural employment.

TEXAS MIGRANT EDUCATION PROGRAM

According to the U.S. Department of Education (2015), Texas has the second largest population of migrant students in the country, second only to California. The Texas Education Agency reports that Texas migrants move annually to 48 other states, making Texas the largest interstate migrant population in the country. About 30,000, or 56%, of migrant families reside in the Rio Grande Valley. The number of students residing in this region is greater than the combined number of migrant students in 40 other state MEPs. Large numbers of migrant families also reside in San Felipe-Del Rio, Eagle Pass, El Paso, Hereford, and Houston. For 2012-2013, there were

48,621 eligible migrant students in Texas, and 36,385 (or about 75 percent) participated in the TMEP. For fiscal year 2014, Texas spent $58,218,323 on the TMEP.

As with other states, the TMEP receives grant funding from the federal MEP (Texas Education Agency, 2014). Local education agencies and educational service centers administer the program. Since program regulation is determined by the federal MEP, much of Texas' regulations are consistent with federal policies and only differ where there is leeway for interpretation (such as for out-of-school youth).

Clements et al. (2011) recently conducted an important evaluation of the TMEP. In 2008, the Texas Education Agency (TEA) contracted with MGT of America, Inc. (MGT), to conduct a two-year evaluation of the effectiveness of the (TMEP) (Clements et al., 2011 p. i). A critical objective of the study was to understand educational performance outcomes (i.e., achievement scores, dropout rates, graduation rates, school attendance, and post-secondary performance (SAT) scores) of migrant students and the impact of the TMEP on these outcomes. Using Propensity Score Matching, which compared a sample of non-migrant students with similar backgrounds to migrant students, the study found that migrant students tended to have poorer outcomes compared to non-migrant students. Migrant students were less likely to stay in school, attend school regularly, pass exit exams, and obtain high scores on the SAT (Clements et al., 2011).

The Clements et al. (2011) study is one of the only large-scale quantitative studies that evaluates the TMEP. Findings indicate that the TMEP has a positive effect on migrant students in terms of dropout rate and attendance. The second part of the study, which provided a qualitative evaluation on the TMEP, concluded that services for migrant families were instrumental for their lives. For example, with changing funding and eligibility requirements for the TMEP during the study years, researchers discovered that migrant families were compelled to remain in TMEP

eligible work in order to continue receiving TMEP benefits. However, the study did not take into account postsecondary attendance or graduation outcomes. Since a main goal of the MEP is preparing students for postsecondary education or employment, such an evaluation is imperative.

Service Provision

According to the U.S. Department of Education (2010), SEAs and Local Education Agencies (LEAs) should identify the special education needs of migrant children in order to determine services. LEAs have the discretion to determine whether there are too few migrant students enrolled in a public or private school for that school to receive MEP services. Not all schools offer services to migrant students.

The 2009 MEP Instructional and Support Survey (Clements et al., 2011) discussed commonly provided services for migrant students and families. These include monitoring student progress towards graduation, coordinating with programs to offer credit accrual, providing record transfers, providing standardized exam tutoring, assisting with learning and study skills, as well as supporting access to an online high school, the Migrant Student Graduation Enhancement Program. Other commonly provided services are geared towards educational provisions in the home, as well as health services.

In addition to this, Texas operates two major long-term programs designed to support migrant student needs: The Migrant Student Graduation Enhancement Program (MSGEP) at the University of Texas at Austin and the Texas Migrant Interstate Program (TMIP). The MSGEP offers migrant students the option of taking high school courses online, passing courses by exam, and even graduating from the University of Texas High School. These pathways include variations to accommodate a variety of students; online courses are available in Spanish and English, math and science tutoring is provided, and courses are accessible in print for students without Internet

access. The TMIP provides inter and intra-state coordination of information, resources, and services for Texas migrant students. The program also provides training and administration of the state assessment test in a way that allows Texas migrant students to take the test in other states.

Texas spends $58 million annually for the TMEP, however the services provided only address the minimal needs of migrant students and their families. The average $1600 per capita spent for TMEP students may not be enough to correct for disadvantages migrant students face, and the fixed Congressional MEP budget does not account for changing needs of the MEP population, or even reassessment of these needs. Basic services such as monitoring student progress towards graduation and standardized test tutoring are fundamental in migrant student's lives, but researchers have argued that the program should go beyond providing essentials in an attempt to decrease the student dropout rate. One possible solution, as Gibson and Hidalgo (2009) argued, is to offer the support of institutional agents to children from economically marginalized backgrounds, which can be instrumental in their academic success. These institutional agents act as advisors who provide more than just information about testing; they can understand, bond, and engage with students, as well as provide advice that can encourage completion of high school and persistence into postsecondary education. Importantly, institutional agents provide a sense of cultural understanding, which can serve as a bridge between students and families that reduces isolation. Additionally, according to Garza, Reyes, and Trueba (2004), the majority of students drop out due to financial necessity and the high opportunity cost of schooling. Providing conditional cash transfers (CCTs) could be a service offered to migrant families which may increase graduation rates and postsecondary attendance.

THE MIGRANT STUDENT EXPERIENCE: THE SCHOOL CONTEXT

The migrant student experience is unlike that of most other students in the United States. Mobility and poverty impact most migrant students and affect every aspect of their life, especially their education. School absenteeism is one of the many consequences of migratory life, which is tied to serious long-term ramifications.

Scholars including Pierre Bourdieu (1977), James Coleman (1988), and Alejandro Portes (2000) view education as a means of attaining human, social, and cultural capital. Human capital is generally defined as the practical knowledge, acquired skills, and learned experiences that make individuals productive at work and in society, which translates to labor and wage outcomes. Educational differences can result in varying achievement outcomes, but the achievement gap may not just be a product of human capital or economic differences, but also as a result of differences in social capital (Bourdieu & Passeron, 1977; Bowles & Gintis, 1976; Coleman, 1988; Stanton-Salazar & Dornbusch, 1995). Social capital is attained through our interactions with others (Kao & Rutherford, 2007; Coleman 1988). It is the networks created, often through interactions at school, which allow people to share experiences and skills or human capital and attain success in school and in life (Gibson & Bejínez, 2002). In their study, Garza, Reyes, and Trueba (2004) found that as migrant student support networks improved, so did their ability to cultivate meaningful relationships and access important resources. Moreover, meaningful relationships between students and staff created social capital and provided a safety network for students—all essential for student success.

One key determinant in the cultivation of social networks for migrant students is the way in which students are perceived by others. For example, teachers who perceive students in a positive light set high expectations for students, maintain strong instructional leadership skills, and create a

positive environment (Garza, Reyes, & Trueba, 2004). Since the school context is one of the few areas where migrant students can cultivate social capital, creating strong relationships with staff is essential for them to attain information and to advance in their education.

Over the last twenty years, research indicates that schools have become more segregated, with segregation among Hispanics growing substantially faster than for other minority groups, including African-Americans (Orfield et al., 1997; Portes & Hao, 2004). Scholars, such as Rumberger & Willms (1992) and Portes and Hao (2004), have identified school composition as a key element of differences in student achievement and dropout rate. They found that schools segregated by socio-economic status (SES) differ in various ways, including teacher quality, staffing ratios, teacher expectations, and school climate. Furthermore, many minority schools are low SES which have been shown to impact students' achievement and dropout rates.

For migrant students, frequent mobility and residing in low-income neighborhoods are obstacles for accessing high quality schools. Compounding effects of school and neighborhood quality influences their human and social capital development, and thereby affect achievement and dropout rates. Migrant families typically have low income (Mehta et al., 2005) and are composed of minority populations. The majority of migrant students are Hispanic (94 percent), and have Spanish as their native language (81 percent) (Office of Migrant Education). Other populations include Vietnamese, Chinese, Cambodian, Haitian, Puerto Rican, African-American, and Eastern European refugees (PMEP, 2008; Branz-Spall et al., 2003).

The MEP may facilitate opportunities for migrant students, such as access to counselors, mentors, and programs, which can enable migrant student achievement despite migration and attending segregated schools. Human and social capital is fundamental for migrant progress and departure from the poverty cycle. Migrants who elect not to pursue (or are not provided) the chance

to participate in the MEP may forgo educational opportunities, be inclined towards low achievement, and eventually dropout from school.

Mobility

The main hardships of migrant students stem from their mobility. Migrants follow seasonal harvests, and as a result, students may change schools and communities multiple times each year (Green, 2003; Strange & Gutmann, 1993). High student mobility is associated with low academic achievement and creates stress in classrooms (Titus, 2007). Heinlin and Shinn (2000) demonstrated through a longitudinal study that there are many variables associated with mobility and achievement. The impact of mobility on achievement often depends on factors including time of mobility, student grade, family socio-economic status, and family background. Wasserman (2001) also revealed a strong correlation between the number of school changes and student performance on achievement tests. Additionally, teachers may invest minimal attention into a population which faces difficulty in keeping up on grades and has little chance of graduating (Titus, 2007).

Moving between schools results in course misalignment and disparities in course credits and grade equivalent (Solis, 2004). Schools may fail to address migrant circumstances, resulting in difficulties for students to finish course work and graduate in a timely manner (Solis, 2004, Salinas & Reyes, 2004; Salinas and Reyes, 2004, Office of Migrant Education). This is especially true at the high school level, where students may have different requirements for graduation at each school (Gibson & Hidalgo, 2009). With regard to standardized testing, migrant students may be prepared for tests in one state and then move to a state with a different exam for which they are not prepared (Solis, 2004). Discouragement and dropout are consequences of mobility and inflexible policies (Solis, 2004).

By choosing to attend school, migrant students forgo alternative options, most commonly paid work. This choice has a value attached, such as lost wages as well as knowledge gained. Weiser (1914) first defined the concept of opportunity cost as the value of an alternative opportunity lost when the resources were used for the chosen service. Although the MEP offers many services for families, it does not take into account the opportunity cost of attending school such as lost wages or time that could be spent helping family members. The opportunity cost of schooling is also higher as the student gets older where more work opportunities become available. Migrant students may find the opportunity cost too high to participate in the MEP. To increase school attendance and participation in the MEP, policies should take this into account by reducing the marginal cost of schooling (or increasing the benefit of schooling); with an incentive such as a cash transfer or subsidy, the benefit of activities other than schooling can be reduced (Behrman, Parker, & Todd, 2011).

Achievement

Student grade point average and state achievement exams are typical measures of student achievement. Data from the U.S. Consolidation Report indicate that migrant student achievement, based on state exams, lags behind "all students" but ahead of Limited English Proficient (LEP) students (U.S. Department of Education, 2015). While national data is not available due to differences between state exams, proficiency for migrant student achievement on state math achievement tests in high school range significantly by state, with Texas typically scoring on the higher end of about 80% proficiency, and California in the middle at about 50-60% proficiency. Comparatively, the category for "all students" indicates that proficiency ranged from 38.6% in Colorado to 92.0% in New York, with Texas at 83.3% and California at 61.2%. Math proficiency

for LEP students ranged from 4.7% in Colorado to 65% in Alabama. In Texas, 56.3% of students were proficient compared to 21.5% in California (U.S. Department of Education, 2015).

Various factors influence student achievement. Teachers may invest little attention and interest into a population which faces difficulty achieving high grades and has little chance of graduating (Titus, 2007). Mobility, family, and work responsibilities result in high absenteeism for many migrant students, lowering achievement and raising the chance for dropping out (Gibson & Bejinez, 2002). Additionally, many migrant students do not speak English at home, which can affect overall English language skills and school achievement. The U.S. Department of Education (2013) reported that there were 138,198 migrant students with LEP status. Studies also indicate that parent expectations influence student achievement outcomes (Fan & Chen, 2001; Halle, Kurtz-Costes, & Mahoney, 1997). Parents' level of education has been shown to affect the educational aspirations and achievement of their students (Sánchez, Reyes, & Singh, 2006; Lippman et al., 2008; Kao and Tienda, 1998). For most migrant farmworkers, the average level of education completed is 8th grade (National Center for Farmworker Health, 2012). This likely impacts the ability of migrant parents to guide and assist their children through the academic process.

About 30% of all migrant families receive incomes below federal poverty guidelines and rely on public assistance; the average income for families is between $15,000 and $17,499 (Mehta et al., 2005). Migrants typically work 6-7 days a week for long hours in difficult conditions (Mehta et al., 2005). This limits their time to provide homework help, attend school meetings, and invest in educational tools for their children.

Finally, immigration status may impact migrant families. Although primary and secondary education is a right regardless of status, in most states, many undocumented families are not eligible to receive federal financial aid for university regardless of academic achievement (Trevino, 2004).

Also, certain states (such as Georgia) limit undocumented student admission into university. Striving for higher education may seem nonsensical for some migrants.

With limited opportunities for higher education, children may instead be encouraged to help with family needs and dropout of school. The economic constraints that many families find themselves in may leave no option but for children to work. Migrant families may not have the leisure to migrate before the school year begins or wait until the school year ends; missed days and missed exams may result in low achievement and incomplete classes. Despite their eligibility in the MEP, migrant students may be unable to participate or feel that other options are preferable.

Chronic Absenteeism

Little information is available on the rates of absenteeism for migrant students in Texas, and yet frequent migration, family obligations, and the need to work can significantly impact attendance. Chronic absenteeism is defined as missing 10% or more of the school year for any reason, whether excused or unexcused (Chang & Romero, 2008). Students who are chronically absent lose out on quality learning opportunities (Chang & Romero, 2008). Poor attendance in the beginning month(s) of the school year can predict chronic absence for the rest of the year (Olson, 2014), and students who are chronically absent in kindergarten exhibit lower levels of academic readiness by the time they reach the first grade (Balfanz & Byrnes, 2012). Additionally, a strong relationship exists between regular school attendance and high school graduation (Balfanz & Byrnes, 2012; 2013). Low-income children are especially affected by chronic absenteeism, as it has a greater impact on their academic gains in literacy and mathematics (Ready, 2010).

Historically, school districts have rarely measured or reported chronic absenteeism because federal and state education laws have compelled districts to measure attendance based on the school's average daily attendance (ADA), which represent the "overall attendance within a school

rather than the attendance rates of individual students" (Balfanz & Byrnes, 2012; Attendance Works, 2013). Hence, even in a school reporting a relatively high ADA (>90%), there still can be significant chronic absenteeism issues hidden since a small group of students may be responsible for the bulk of the absences (Balfanz & Byrnes, 2012). In this instance, students who have perfect or near-perfect attendance "mask" the chronically absent students, resulting in high ADA reports for the school despite the presence of chronic absenteeism (Bruner et al., 2011).

In addition to receiving fewer hours of education and performing poorly on standardized tests and in-classroom exams (Chen & Stevenson, 1995; Finn, 1993; Gottfried, 2011a), students who are chronically absent have been found to have an influence on their school learning environments (Epstein & Sheldon, 2002). When students who are chronically absent return to school, teachers are either ill-equipped or are under too much pressure from high-stakes systems of accountability to devote additional time to help them catch up to their peers (Gottfried, 2013). Chronically absent students are likely to feel alienated from their peers and teachers due to their low attendance in school (Gottfried, 2011a), and numerous researchers have indicated that students who feel alienated in school can have behavioral issues in classrooms, disengage from instruction and learning, and feel as if teachers are ignoring them because of their chronic absenteeism (Ekstrom, Goertz, Pollack, & Rock, 1986; Finn, 1989; Gottfried, 2011b; Gottfried, 2013; Johnson, 2005; Roderick et. al, 1997).

Additionally, chronic absenteeism can have both short-term and long-term effects on students' social, emotional, academic, and physical well-being. As students become increasingly absent from school, they become more likely to engage in illegal activities, including drug use, alcohol consumption, and other criminal offenses (Baker, Sigmon, & Nugent, 2001; Garry, 1996; Gottfried, 2009; Hallfors et al., 2002; McCluskey, Bynum, & Patchin, 2004). Involvement in these

types of activities has been found to be highly correlated with school disengagement (Garry, 1996; Kearney, 2008) or dropping out entirely (Balfanz & Byrnes, 2012). Dropping out of school has long-term effects on students, leading to early detachment from school-based health services and potential economic, social, occupational, and marital problems in adulthood (Hibbett & Fogelman, 1990; Kearney, 2008; Kogan, Luo, Murray, & Brody, 2005; Tramontina et al., 2001). Researchers have also linked increased absenteeism to an increased likelihood of self-injury, suicide attempts, and teenage pregnancy (Almedia, Aquino, & de Barros, 2006; Hallfors et al., 2002; Henry & Huizinga, 2007). While chronic absenteeism is a critical indicator of school completion and future wellness, no studies have measured absentee rates among the migrant student population or compared it to the general student population.

ACCESSING HIGHER EDUCATION

The migrant student postsecondary experience combines four key features: migrants are almost all the first in their families to attend college (only 13% have graduated from high school; SAF, 2011), the majority are Latino (Mendez, 2014), they are a transient high-poverty population, and about one-third of students have limited English proficiency status. This unique set of factors means that few migrant students are expected to attend university. The students who do attend face broader and intersecting challenges associated with being a marginalized Latina/o, migrant, and first generation student. Little is known about their college experience; data is lacking on students' college major, STEM participation, standardized test scores such as SAT or ACT, type of institution attended, or the level of degree awarded to migrant students.

Texas legally mandates that the top 10% of graduates from public high schools receive automatic admission to public colleges and universities in the state. However, the broader policy landscape in the U.S. hinders migrant students' attendance and university completion. Students face

anti-immigrant, anti-bilingual, and anti-affirmative action policies, which impact the financial aid available for migrant students (particularly those who are undocumented or non-U.S. citizens), foster a deficit perception of their language skills, and restrict access to more selective higher-education institutions (Núñez & Gildersleeve, 2016).

While limited research has explored migrant student postsecondary education and outcomes, many studies have been devoted to first generation college students (Terenzini et al., 1996; Hoffman, 2003; Astin & Oserguera, 2005) as well as Latina/o postsecondary education (Saenz et al. 2007; Hurtando et al., 2008; Yosso et al. 2009). Since the majority of migrant students are first generation Latino students whose main language is Spanish, outcomes for first generation Latina/o students likely have similarities to the migrant student population.[3] While I focus primarily on studies that address migrant postsecondary outcomes, I weave first generation college attendance and Latina/o postsecondary education into the discussion.

Saenz et al. (2007) discovered that Hispanic students are the least college-educated racial or ethnic group; in 2005, 69.1% of Hispanic adults did not have a college education. They did however, have the highest proportion of first generation students attending college, at 38.2%. More than half of Hispanic students are reported to enroll in community colleges (Harvey, 2003). Migrant students are also reported to be overrepresented in two-year institutions (Arbona & Nora, 2007). Studies indicate that for many ethnic minority students, a two-year institution has not provided a gateway to a four-year university or completion of a bachelor's degree (Hoachlander et al. 2003; Wassmer et al., 2004). Furthermore, after six years of attending a community college, only 6% of Latino students had been awarded a bachelor's degree (Hoachlander et al., 2003). For Latino students, attending a four-year institution positively predicts successful completion of a bachelor's

[3] Hispanic and Latino/a are used interchangeably as composite descriptors referring to Spanish speaking individuals generally from South and Central America, Mexico, or the Caribbean.

degree, and the predictive strength increases with the selectivity of the school (Alon & Tienda, 2005; Arbona & Nora, 2007; Hoachlander et al., 2003).

Numerous factors are responsible for student degree attainment in post-secondary education. For example, parent's level of education has been shown to be a predictor of degree aspiration and completion (Terenzini et al., 1996; Astin & Oserguera, 2005). Additionally, studies demonstrate that parent's level of education impacts the type and selectivity of institutions students attend (Karen, 2002; Pascarella et al., 2004). Pascarella et al. (2004) found that when compared to students whose parents attended college, first generation college students have been shown to perform at lower levels and are less likely to obtain a degree (Hoffman, 2003; Terenzini et al., 1996). They have also had lower levels of bachelor's degree attainment, or chance of attaining any type of degree (NCES, 1998). Terenzini et al. (1996) discovered that first generation students are at a higher risk for attrition. Two key factors contribute to lowered success for first generation students. First, they were found to work more hours per week, and as a result, completed fewer credit hours in their first year. Secondly, first generation students were more likely to work and live off campus by the end of their second year in college than their peers. While enrolling in higher education is an important step for students, it is not a guarantee of graduating. However, students who continue on to the second year, whether the student is in a two or four-year college, are more likely to graduate (Willison & Jang, 2009). Therefore, student retention beyond the first year is an important indicator for many institutions.

Socio-economic status (SES) is another contributing factor for college attendance and degree completion. Cabrera, Burkham, & La Nasa (2001) found that out of the students who attend community-colleges, those with low SES were less likely to transfer to four-year universities compared to students who do not have low SES. Mortenson (1998) discovered that students from

families in low-income quartiles are far less likely to earn a bachelor's degree than families in high income quartiles by the age of 24. Akerhielm et al. (1998) also found that among those students who scored in the top one-third on standardized tests, students from low-income families were five times more likely to forgo college as compared to students from high-income families. Saenz et al. (2007) stated that more first generation students than their peers reported that financial considerations determined the college and the course of study they would pursue. Singell (2004) reported that insufficient financial support, working to pay for school expenses, and poor performance in college significantly increase the probability of a student dropping out. Duron (1995) conducted a qualitative study of migrant students and found that financial problems were not only the main reason that students dropped out before graduating from high school, but also a key factor for leaving postsecondary education. Of the 53% students who had dropped out of school, the main reason for dropping out was either inability to pay for school or the need to work. For migrant students, who are often high poverty, financial problems may result in forgoing college, dropping out, or choosing a less expensive major. By offering a subsidized financial package, universities can increase the probability of a student graduating since unsubsidized and merit-based aid packages have lowered the relative graduation rates of needy students (Singell, 2004).

Although some studies indicate Latinos receive limited parental support to attend college (Martin, 1997), many migrant students attend post-secondary education as a result of parental encouragement (Cranston-Gingras, Morse, & Alvarez, 2004; McHatton, Zalaquett, & Cranston-Gingras, 2006). Contrary to the popular belief that non-college educated parents fail to motivate their children to attend college, Saenz et al. (2007) discovered that more first-generation students than their non-first generation peers reported that they attended college because their parents wanted them to attend. Duron (1995) and Sawyer (2008) both found that students indicated their

families were the most significant factors impacting the decision to pursue postsecondary education.

Family expectations and cultural traditions may help to illuminate low attendance rates among migrant students. Gidden's (1984) structuration theory provides a framework for understanding why students drop out as well as why few students continue on to postsecondary education. Structuration theory argues that "structure and agency are not separate and opposing entities" (Valadez, 2008 p. 838). Instead, it explores the notion that agents operate within a structure and these structures have been internalized. The argument is that structures inform and constrain people's decisions, which may seem irrational from an outsider's perspective (Valadez, 2008). With limited opportunities for higher education due to legal and financial constraints and family priorities, structuration theory argues that migrant children may be encouraged to help the family and dropout of school or not participate in higher education.

Once at university or college, migrant students face the challenge of limited social support in their new surroundings during the necessary adjustment to college life (Duron 1995; Cranston-Gingras, Morse, & Alvarez, 2004; McHatton Zalaquett, & Cranston-Gingras, 2006). Terenzini (1996) reported that first generation students are less likely to encounter a welcoming environment on campus.

STEM: Science, Technology, Engineering, and Mathematics

The prevalence of migrant students in Science, Technology, Engineering, and Mathematics (STEM) education has not been measured. While the US government continues to endorse STEM across the education spectrum, Latino students are underrepresented in STEM majors and in STEM fields (U.S. Department of Education, 2014). White and Asian students earn the majority of STEM degrees in the US (Adelman, 2004a; Hilton & Lee, 1988). While there is attrition from every racial

category, Latino students are more likely to drop out of STEM majors, and less than 5% of the STEM labor workforce is composed of minority racial groups (Bonous-Harnmarth, 2000; Williams, 2014).

The US government began to heavily promote STEM education beginning in 1996 by increasing quality and accessibility from kindergarten through graduate education (Sanders 2009). However, only about 40% of college graduates who declare a STEM major graduate with a STEM degree (President's Council of Advisors on Science and Technology (PCAST), 2010). While about one-third of US students graduate with a STEM bachelor's degree, about 53% of Chinese students and 63% of Japanese students graduate with a bachelor's degree in a STEM field (PCAST, 2010).

There are four important justifications for promoting a STEM education: 1) Science literacy is instrumental to many fields beyond STEM including fields such as government and insurance (Matthews, 2007). 2) Science literacy can promote innovation and technological advancement (PCAST, 2010). 3) Citizens can take an active role in civic affairs by using scientific knowledge in their daily lives (NRC, 1996). 4) There are twice the number of STEM jobs available for the number of qualified job seekers (U.S. Department of Education, 2014).

College Assistance Programs

Latino first-generation low-income students often lack knowledge necessary to navigate the complex US higher education system (as well as lack access), and therefore, face many barriers to success in higher education. In order to help migrant students attend and complete postsecondary education, the federal government has developed several retention programs in universities and colleges (Maldonado, Rhoades, & Buenavista, 2005; Thayer, 2000). These programs promote academic success and decrease dropout rates among underrepresented students (including first generation Latino students). As was discussed in the previous sections, many students lack systems

of support. Therefore, connecting students to social services and systems of support can help them graduate (Maldonado, Rhoades, & Buenavista, 2005).

The federal TRIO programs are an example of such a program, they were designed to "improve college persistence and graduation rates among low-income, first-generation, and disabled college students at two- and four-year institutions" (Engle & Tinto, 2008 p. 25). Services include instruction in basic skills such as: tutoring, academic advising, mentoring, grant aid, and counseling for financial aid, transferring, and career decisions. Upward Bound (UB) was the first Federal TRIO Program created under the authority of the Economic Opportunity Act of 1964 (Department of Education, 2014). "Talent Search (TS) was created as part of the Higher Education Act of 1965 to assist students applying for newly authorized federal financial aid for postsecondary education" (Department of Education, 2014 p. 3). In 1968, Student Support Services (SSS) was created when the Higher Education Act was amended in 1968. Together this formed the "trio" of federal support programs (Department of Education, 2014). Since then, five additional programs have joined. SSS specifically provides services for students already in higher education. Research indicates that students who take part in the SSS have a higher persistence and degree completion rates as compared to similarly disadvantaged students (Engle & Tinto, 2008). Furthermore, students who remain in the program longer receive greater benefits from the program (Cheney et al, 1997; U.S. Department of Education, 2005). In 2013-2014, nationwide there were 2,791 funded projects that served 758,352 students. A total of $785,720,504 was spent on the programs (Department of Education, 2014). Research on retention programs (including TRIO) indicates that they have helped students adjust to college life, increase their academic capabilities and competencies, connect with social networks, promote social capital that is useful in the academic community, and help students

stay on track in completing their degree plans (Davis, 2008; Maldonado et al., 2005; Ovink & Veazey, 2009; Thayer, 2003).

College Assistance Migrant Program (CAMP)

Some college assistance programs are explicitly oriented towards migrant students; the College Assistance Migrant Program (CAMP), under the Migrant Education Program, is instrumental in guiding migrants and providing support. CAMP provides scholarships and mentoring for migrant students attending universities and serves about 2,400 students annually (Suarez, 2010). This is one of the only programs designed for migrant students. In order to qualify for the CAMP program, students must have been accepted by a university, have a high school diploma or GED, and be a U.S. citizen or permanent resident. Students also qualify for the program if they or their parents have worked in migrant or seasonal farm work for at least 75 days during the 24 months prior to applying to the university or if the students were part of the MEP in high school (CAMPAA, 2003; Cranston-Gingras, Morse, & Alvarez, 2004).

Studies indicate that CAMP offers academic and emotional support for students as they transition to college (Salinas & Reyes, 2004). Ramirez (2012) found that CAMP students were more likely to have a higher rate of persistence and higher GPA in their first year compared with migrant students, Latino/as, and general student populations. Moreover, students who were able to use the academic and financial services CAMP provides were more resilient to academic setbacks, challenges, or stress (Mendez, 2014). Although CAMP financial aid packages were often small, they were enough to keep students from dropping out of college, and CAMP assisted students in navigating the university system, including financial aid (Mendez, 2014). Willison and Jang (2009) found that about 86% of students completed their first year of college and about 81% of students

returned for a second year. These outcomes illustrate that CAMP has helped migrant students navigate the postsecondary system and retain migrant students at university.

In Zalaquett, Alvares, and Cranston-Gingras's (2007) study, the authors sought to identify what attributes contributed to students finishing high school and enrolling in higher education. They conducted a qualitative study with 52 Latino migrant students in the 2003, 2004, and 2005 CAMP cohorts at a large urban university. The authors found that contrary to the migrant students who drop out of school, the CAMP students were comfortable with themselves, competitive, and proactive in their classes. They were also disciplined and more averse to making mistakes in life or in school. Similar findings were evident in Duron's (1995) study. Both studies concluded that migrant students were motivated to pursue higher education. Students reported that they generally did not feel discriminated against and the schools made an effort to understand their Latino background as well as their migrant circumstances.

It is important to note that few migrant students make it to postsecondary education and even fewer graduate. As Suarez (2010) noted, CAMP serves only about 2,400 students annually, and data on graduation rates is not available. However, for the students who do make it to higher education, such as those in Zalaquett's et al. (2007) study, two theories shed light on their characteristics. Weiner (1974, 1986) theorized that student success (or lack of success) in school is linked to three categories: innate ability, effort, and external factors. The students in Weiner's study attributed their failure in school to lack of ability to perform, their own insufficient effort, or external aspects such as bad luck. Students who linked their success to internal factors, either innate ability or personal effort, had better outcomes than students who attributed it to external factors. Bempechat et al. (1999) also discovered that there was a difference in perception of success between high and low achievers. Higher achievers ascribed success to high ability, but did not

believe that failure was due to lack of ability. Lower achievers however, ascribed success to external factors and attributed failure to lack of ability. Migrant students in Zalaquett et al., (2007) study fit these characteristics of high achievers, as they credited their success to their abilities, and took responsibility for their own discipline. Their perceptions that they did not encounter discrimination and that their schools supported their efforts may have been a result of internal perceptions of success rather than the actual absence of these barriers.

For migrant students, the social and cultural structures in their lives often create pressure and define the choices the students make, limiting their agency. Furthermore, the opportunity cost of attending school comes at a high price, whereby students must forgo time for work and family. While structuration theory illuminates the pressures that many migrant students face, Weiner's (1974, 1986) and Bempechat's et al. (1999) theories on high and low achievers capture characteristics of effective students. By developing and utilizing these individual student traits (also described by Zalaquett et al. (2007) regarding successful CAMP students), it is possible to mitigate the pull of structural forces for migrant students, build agency, and thereby direct students towards higher education. Human capital theory postulates the need to invest in migrant secondary and postsecondary education to develop skills that are transferable to the workplace. These skills may include characteristics of effective students as well as personal agency to make decisions.

LABOR MARKET OUTCOMES

Currently, no studies are available on the labor market outcomes of U.S. migrant students or students who have gone through the MEP. This gap in the literature presents an opportunity to research and inform government agencies, the private sector, and communities on the long-term outcomes of migrant students. I review variables that are associated with labor market occupation

and wage outcomes. Furthermore, I review literature on the labor outcomes of first generation Latino students as the nearest comparison to the migrant student population.

Variables that Impact Occupation and Wage Outcomes

Many factors impact occupation and wage outcomes. Human capital theory (i.e. Smith, 1776; Schultz, 1961; Becker, 1962) argues that education and skills result in varying wages and occupations. Human capital investment theory states that differences in skills, knowledge, and behavior impact differences in job status and wages (Farkas et al., 1997). Other studies demonstrate that ability, including cognitive ability and non-cognitive behavior impact labor market outcomes (Farkas et al., 1997; Heckman et al., 2006; Jencks, 1979; Murnane, Willet, & Levy, 1995; Raudenbush & Kasim, 1998). Thurow (1975) meanwhile, argues that wages are set with collective bargaining and productivity, and earnings are linked to job types. Portes and Rumbaut (2001) demonstrate that immigration, generation status, and assimilation impact wage and occupation.

Determinants of wages are also linked to supply and demand factors. Demand side factors include: changes in skill-based technology changes (Levy & Murnane, 1992); policies on minimum wages (Blau & Kahn, 1996); and movement from manufacturing to service industry (Levy & Murnane, 1992). Supply side factors include the large supply of low-skilled immigrant workers, differences in their abilities, as well as gender (Svizzero & Tisdell, 2003; Taylor, 2006).

Family factors include socioeconomic status (Farkas, 2003; Rosenbaum, 2001; Blau & Duncan, 1967); parental level of education (Van de Werfhorst & Andersen, 2005; Halaby, 2003); and social network and parental support (Whiston & Keller, 2004; Phillips et al., 2002; Bidwell & Plank, 2000).

High school curriculum has also been instrumental in preparing students for the workforce in regards to developmental tasks, vocational development, career maturity, and readiness (Philips,

et al. 2002; Grabowski, Call, & Mortimer, 2001; Gray & Herr, 1998). For high school students, misalignment of student aspirations and preparation for future careers can impact the transition to work (Schneider & Stevenson, 1999; Blustein, et al., 1997). Vocational and technical training in high school has also been shown to greatly impact student's abilities to find meaningful employment as well as wages (Brown, 2003; Rosenbaum, 2002; Griffith & Wade, 2001). Neumark and Rothstein's (2006) study indicates that cooperative education, internship, and apprenticeship, increased employment after high school graduation by 7–9%, and particularly for economically disadvantaged groups.

Labor Outcomes: First-Generation Immigrants

As of 2010, one in four Americans under 18 was a first or second generation immigrants (Jensen, 2001). Immigrants are also the fastest growing component of American society (Portes & Rumbaut, 2005). Immigrants face many difficulties assimilating to life in the US. Many Latino immigrants work in low-wage service occupations and have little opportunity for upward mobility (Cranford, 1998; Menjivar, 2006). Portes and Rumbaut (2001) argue that the only way for immigrant children to enter the economy at a higher level than their parents is through educational attainment. Students who are not able or choose not to enroll in higher education may pay a long-term price. Today, a high school diploma provides few opportunities for students. Many argue that a college degree will be the only option for social and economic mobility (Abrego & Gonzales, 2010). Those who do not attain a higher education are met with increased job insecurity and low wages (Abrego & Gonzales, 2010).

Portes and Rumbaut (2005) conducted a longitudinal study on the children of immigrants called the Children of Immigrants Longitudinal Study. The study consisted of surveying 5,262 students across three time periods. Students came from 77 different countries and were all first or

second-generation immigrants. The first study was conducted in 1992, when children were at the average age of 14, the second was conducted in 1995, when students were entering either their senior year of high school or had just graduated, and the third study was conducted in 2002-2003, when the average age of students was 24 as to determine student outcomes following graduation. In total 3,613 students responded to the final survey. Portes, Fernandez-Kelly, and Haller (2005) reviewed the results of the survey and found that out of these students, 4% had completed less than high school, 15.7% had only a high school diploma, 29.8% had attained a bachelor's degree or higher, and 52% were still attending postsecondary school. Over 65% were employed full time, 6.6% were unemployed, and 4.9% were self-employed. The respondents received 47.2 on the Treiman Occupational Prestige Score. The prestige refers to the relative social class positions that people have in regards to the respect people have in society. The positions range from 0 to 100 with top 20 highest positions ranging in the 70s. The prestige score for the respondents means that they have relatively high social positions. The average personal income in the study is at $23,172. Nine point six percent of participants had been arrested in the last five years, and 5.4% had been incarcerated or sentenced in the last five years. This study, which spanned over 10 years, provides important results on the outcomes of immigrant students. Over 80% of students had graduated from high school and many had gone on to university and higher. Most of these students were employed full time in a relatively prestigious occupation. Furthermore, regression analysis indicated that for the students, each additional 2 years of education yielded an extra $2600 of annual income. Although they or their parents had come as immigrants, these one-and-a-half- and second-generation students, through education had been able to attain relatively high achievement.

The Pew Hispanic Center (2004) reported on demographics of first and second-generation Latino students. The Pew Hispanic Center/Kaiser Family Foundation conducted the National

Survey of Latinos in 2002. They noted that in regards to the total household income before taxes, 50% of foreign-born Latinos have incomes less than $30,000 annually. However, for those that arrived at or before age 10, only 43% have a total household income of less than $30,000, while for those that arrived after age 10, 60% do. Twenty-three percent of foreign-born Latinos have annual household incomes between $30,000 and less than $50,000, and 17% have incomes greater than $50,000 annually. Overall, Latinos who arrived before age 10 fare much better income wise than those who arrived after age 10. Meanwhile, for the second-generation, 40% had an annual household income of less than $30,000, 26% were between $30,000 and $50,000, 24% had an annual household income greater than $50,000, and 10% did not know.

In regards to schooling, 43% of foreign-born Latinos completed less than high school, 31% were high school graduates, 16% had completed some college, and 9% were college graduates or more. Again, great disparities exit between children who arrived before or at age 10, and those who arrived after. For those who arrived before, 13% were college graduates or more, 16% had some college, 44% were high school graduates, and 28% had less than high school. Comparatively, for those who arrived after, only 6% had more a college degree or more, 8% had some college, 27% were high school graduates, and a staggering 59% didn't finish high school. Second generation students fared better than the first generation, although similarly to the 1.5 generation. Twenty-five percent had less than a high school degree, 33% were high school graduates, 28% had some college, and 14% had more than a college degree.

These outcomes indicate that while the first generation of immigrant Latinos struggles, the second and even one-and-a-half generation manages to assimilate and double their achievement levels. By the second generation, one quarter of Latinos have household incomes greater than $30,000 annually and another quarter have incomes greater than $50,000. This survey fails to

control for family socio-economic status, social, human, or cultural capital which has been demonstrated to impact education and labor outcomes.

Borjas and Katz (2007) found that differences in human capital between Mexican immigrants and US born workers accounts for three-quarters of the large wage discrepancy suffered by Mexican immigrant. While immigrant non-Mexican workers quickly catch up with U.S. native counterparts in terms of wages, Mexican workers fail to converge as quickly.

The Pew Center also tabulated Current Population Survey Data and found that in the US, for 2007-2008 foreign-born Hispanics accounted for over 400,000 workers in agriculture, forestry, fishing, and mining. Native-born Hispanic workers accounted for about 160,000 in the same industry. Comparatively, there were about 2.3 million native born, non-Hispanic workers in the industry. The number of foreign-born Hispanic workers in agriculture, forestry, fishing, and mining, is much lower than for most other industries, highlighting that research on Latina/o immigrants may not be fully applicable to the agricultural migrant worker situation (Kochhar, 2009).

DISCUSSION

This literature review highlighted the role of TMEP program factors that impact the outcomes of migrant students in the K-12 and higher education context. The review covered three themes of research in the postsecondary outcomes of migrant education: how guidelines within the MEP and TMEP impact K-12 and higher education outcomes, the effect of the migrant student experience on education outcomes, and the personal and program factors that determine migrant student success.

The guidelines in the MEP have been designed to address the extraordinary challenges that migrant students face. Yet, despite the great measures that the program has taken to spell out specific restrictions to program eligibility, funding, services, and identification and recruitment,

migrant students are nonetheless dropping out of school at exceptional rates. What's more, about one-third of eligible students are not being served. Success in primary and secondary school, facilitated through the MEP, is vital for migrant student continuation to higher education.

As literature indicates, explanations for these outcomes from a program level include MEP budget restrictions after 2002, strict eligibility limitations left up for interpretation, eligibility discrepancies between states, unevaluated service provision, and lack of legal mandate to provide services to all migrant students.

Frequent migration, financial difficulties, health issues, and family obligations, all of which impact schooling, are just some of the difficulties migrant students encounter. The lack of social support networks, information, and human and social capital obtained through schooling and interactions with others have created additional barriers for migrant student advancement in the education process. This review has indicated the significance of certain factors that migrant students have deemed essential for high school graduation and postsecondary education. Support networks in the form of mentors, teachers, or counselors can provide students with the missing social capital essential for attaining information and advice. Providing migrant students with a financial aid package or a CCT could give many children the opportunity to study instead of work. Assistance with course credits and exam preparation are necessary services for migrant students, instrumental in order to graduate and move forward. Information about the workings of the higher education system or potential financial aid sources, as well as career opportunities, can be critical to beginning and continuing with higher education. Since migrant students often have difficulty accessing these resources, the MEP can provide students with such information.

Furthermore, parental encouragement continues to be a key factor which motivates students to pursue higher education. Building parental support, and engagement can be the difference

between the students who graduate and those who do not. The MEP can facilitate discussions with families on the possibilities of higher education and career opportunities providing an incentive for high school graduation and postsecondary continuation.

Once in an institution of higher education, there are several considerations that determine whether students continue on to a second year and whether they attain their degree. Even if a student is accepted to college or university, inadequate preparation in high school can make it difficult for the student to keep up with the work or understand the necessary steps for successful degree completion. Therefore, identifying institutional obstacles at an early stage can provide students with academic and financial assistance. Furthermore, limited social support and difficulty in adjusting to college life may make assimilation and maintaining high achievement challenging. Joining a community, which may be facilitated by programs such as CAMP, can support migrant students. Moreover, the lack of financial resources and the need to work to support themselves or their family proves to be the greatest challenge for migrant students. Informing students on how to apply for financial aid as well as providing comprehensive aid packages can facilitate migrant student success. Finally, students who are intrinsically motivated, resilient, self-reliant, and attribute success to their own abilities and effort have been found to succeed. The MEP should work with parents, mentors, and teachers to educate students and build up such characteristics.

Human capital is an accumulation of education and skills. The theory argues that these resources later impact labor market occupations and wages. Therefore, it is imperative that the MEP and TMEP programs expose migrant students to high quality instruction and training so they may be competitive in the workplace. The review of literature on labor market and wage outcomes establishes the significance of various factors, ranging from macro to micro variables, which impact labor market outcomes. Factors include economic trends and policy, immigration rates,

technological changes, geographical considerations, family socioeconomic background, parent education, personal cognitive abilities, levels of education accumulation, and many others. While HCT fails to account for many of the factors that contribute to labor and wage outcomes, a student's education, as highlighted in the literature, is the most important. This theory connects long-term achievement of student with the level and quality of education received in primary, secondary, and postsecondary schools. Many factors impact the lives of migrant students and their families. However, the federal government through the MEP does have control over the quality of education, resources, and services migrants have access to. While it is much more difficult to impact socioeconomic status or education level of a migrant student's parents, it is possible to build the skills and proficiencies of migrant students. In the long run, these may impact long-term outcomes for the student, as well as economic and social health in society.

A comprehensive analysis of postsecondary preparation and attendance as well as labor outcomes are necessary to evaluate the MEP and TMEP. Furthermore, analyzing whether or not the services offered to migrant students are truly meeting their needs and whether there is enough money in the budget to do so is instrumental for migrant student and program success. There is currently a gap in the literature as to the number of students that attend and graduate from postsecondary education, who they are, and what services impact postsecondary attendance and graduation. Furthermore, there is no literature on migrant student labor outcomes. Nonetheless, this literature review did highlight many areas that need to be investigated further.

RESEARCH QUESTIONS

The literature review highlighted many gaps of knowledge on migrant student outcomes, particularly for students eligible for the MEP/TEMP. Although there are many possible areas to explore, I focus my research on the following topics in K-12, postsecondary, and the labor market:

1) What are the rates of school absenteeism and chronic absenteeism for Latino migrant students in Kindergarten through 12th grade compared to the non-migrant Latino population? Furthermore, what effect does enrollment in the TMEP, have on absenteeism and chronic absenteeism of Latino migrant students?

2)

    a) For Latino migrant and non-migrant students, contingent on being admitted to and enrolling in public university in Texas, what are outcomes for SAT scores?

    b) For Latino migrant and non-migrant students, contingent on attending university, community college, or career school, what is the level of degree obtained?

    c) For Latino migrant and non-migrant undergraduate students, contingent on attending public university in Texas, what are the odds of enrolling in a STEM major?

3) In regards to labor market outcomes, I compare the following outcomes or Latino migrant and non-migrant students who attended either K-12 or postsecondary school in Texas:

    a) The odds of working in agriculture sector

    b) Annual wages

TOTAL AND CHRONIC ABSENTEEISM

This study establishes whether significant differences exist for Latino migrant students versus Latino students who are not migrants, for the dependent variables *total days absent* as well as for *chronically absent*. Prior research suggests that chronic absenteeism is a critical indicator of student well-being, school completion, and long-term outcomes; yet, it has yet to be measured among the migrant student population. As in prior studies (Chang & Romero, 2008), *chronically absent* is defined as 10% of the total school year, which amounts to about 18 days annually. Total

days absent is measured by the total number of days students are absent (for any reason) across all schools from the days the student was enrolled across all schools. Counting only days absent while the student was enrolled in school (versus an entire school year of 182 days) was justified with Texas Education Code §§25.092 which states that students who could not have attended a class before enrollment should not have the days of class that occurred before their enrollment counted against them for purposes of "the 90 percent rule". The 90 percent rule states that students must attend 90% of school days in order to receive credit for a class. This rule is specifically geared towards populations such as migrant students, accounting for the consequences of migratory work. Furthermore, ratio of days absent to days enrolled is not used since this method could bias the rate against the migrant student population.

POSTSECONDARY DEGREES, MAJORS, AND STANDARDIZED TEST SCORE

This study aimed to determine the postsecondary outcomes of Latino migrant students formally eligible for the TMEP and compare outcomes to Latino non-migrant students. Little is known about the migrant student experience following graduation and student admission into postsecondary education. Three analyses were conducted that considered the following:

- SAT scores for students admitted into public universities
- Institution attended and level of degree obtained
- Odds of enrolling in a STEM major

According to the College Board, SAT scores are used to assess student's college readiness and predict college outcomes. They also provide colleges with a measure of overall academic performance in relation to the national applicant pool (Ritger, 2013). While used widely by colleges in Texas, SAT scores do not take into account high school performance, family income, extra-curricular activities, or access to SAT tutoring. However, since they are used as an indicator of

college readiness and student academic ability, this study compares SAT scores for the Latino TMEP and non-TMEP population. Moreover, one of the services the TMEP provides is SAT tutoring, but data is not available for whether the student had access to such tutoring. SAT scores are only available for students admitted to and attending public universities in Texas. Data for community colleges and career and technical school was not provided.

The type of institution students attend (whether it is community college, career/technical school, or university) as well as the likelihood of level of degree attained, is an indicator of student access, ability, and labor force outcomes. Providing these measures for the Latino TMEP and non-TMEP population offers an important look into migrant student performance. Linking level of degree attained and migrant student wages in the workforce data allows for further understanding of long-term migrant student outcomes.

As mentioned in the literature review, graduating with a degree in a STEM field can provide students with numerous job placement opportunities. Estimating the odds of enrolling in a STEM major presents information on migrant student academic performance since majoring in STEM requires strong analytical and mathematical skills.

LABOR MARKET WAGES AND SECTOR EMPLOYMENT

The study on labor outcomes for former Latino migrant students in Texas strives to provide preliminary information on long-term outcomes of students who formally participated in or were eligible for the TMEP. Such an analysis has not been conducted, and will provide insight into the long-term effects of being a Latino migrant student. The study is divided into two parts – one that captured every student who finished high school and went on to the labor force, and another which considered only students who attended postsecondary education. These two analyses provide information on wages of Latino migrant and non-migrant Latino students, beginning in 2008, to

allow time for the first cohort of students to have time to enter the workforce. They capture the odds of remaining in the agricultural sector, as well as the average time spent in the sector. The studies also discuss main sectors Latino migrant and non-migrant students participated in. For both studies, wages are captured annually.

Chapter 3: Methodology

Based on the literature review, I include variables that have been shown to impact student achievement, graduation rates, and labor market outcomes, and variables capturing these outcomes. In this chapter, variables used in the analysis are discussed, as well as the methods used for the study.

DATA

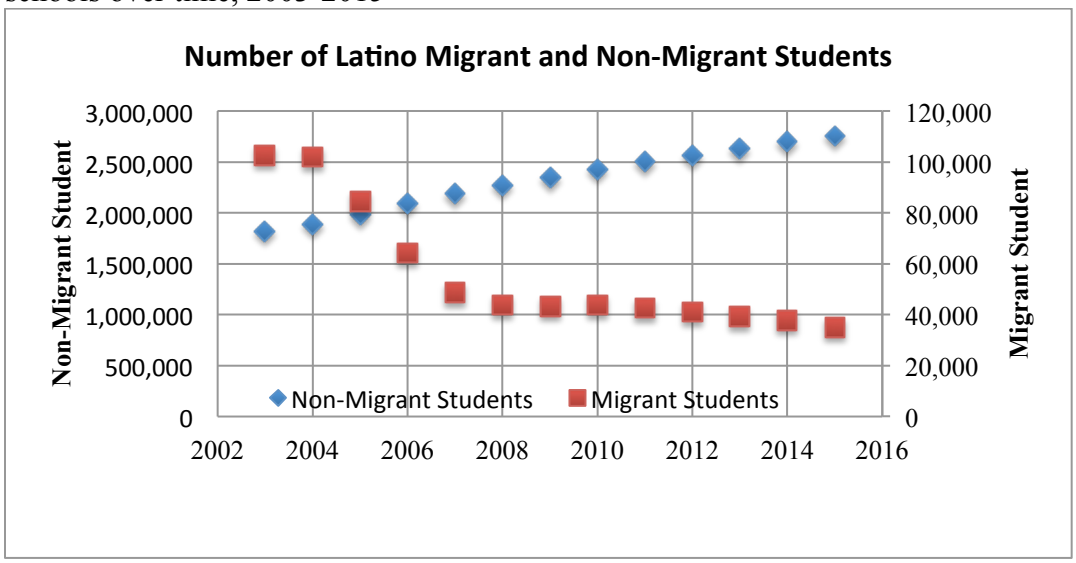
Data comes from the Public Education Information Management System (PEIMS) from the Texas Education Agency (TEA), the Texas Higher Education Coordinating Board (THECB), and the Texas Workforce Commission (TWC). The PEIMS dataset provides data on K-12 outcomes for students; the THECB dataset provides data on higher education outcomes for students; and the TWC includes data on workforce outcomes in the state of Texas. This data is housed at the Education Research Center (ERC) at the University of Texas at Austin. The data for this study is de-identified student-level data, and contains the whole population of students and laborers in Texas between the years of 2003 and 2016. Datasets were combined across agencies and years by a student identification indicator. The PEIMS dataset includes a variable that flags students who are eligible for the Texas MEP in K-12 education and allows students to be tracked in postsecondary (THECB) and labor (TWC) data. TMEP eligibility is defined as students who meet the MEP eligibility criteria as set out by the program. However, not all eligible students participate in the program, in fact, only about 67% of eligible students participate overall in the US (Clements et al., 2011) and about 75% in participate in Texas (U.S. Department of Education, 2013). According to TEA data, in 2015 there were 35,781 TMEP eligible students in Texas. The number of TMEP eligible students has declined annually. In 2003 106,387 TMEP students were eligible, but by 2016,

it had decreased to about 35,000. Meanwhile, the total number of students enrolled in public schools in Texas increased annually. Since 2003 migrant students as percent of the total student population in Texas have decreased from 2.4% to 0.66%. According to TEA K-12 data, between 2003 and 2015, there were about 11.2 million individuals out of which 226,534 were individual migrant students in the data set. For the sample of Latino migrant and non-migrant students used for the analysis, there were 5,191,405 individual Latino students in the data between 2003 and 2015, and 217,437 individual Latino TMEP students. The number of Latino TMEP students has also decreased annually from about 5% of the total Latino population in 2003 down to 1% in 2015. Figure 1 and Table 1 provide counts.

Table 1: Number of Latino migrant and non-migrant students in K-12 Texas Schools 2003-2015

Year	Non-Migrant Students	Migrant Students	Total
2003	1,818,262	102,656	1,920,918
2004	1,890,039	101,988	1,992,027
2005	1,984,585	84,555	2,069,140
2006	2,092,423	64,217	2,156,640
2007	2,187,930	48,552	2,236,482
2008	2,269,440	43,907	2,313,347
2009	2,346,965	43,406	2,390,371
2010	2,430,986	43,886	2,474,872
2011	2,502,114	42,575	2,544,689
2012	2,561,222	41,072	2,602,294
2013	2,628,857	39,297	2,668,154
2014	2,697,689	37,700	2,735,389
2015	2,757,331	35,140	2,792,471
Total	30,167,843	728,951	30,896,794

Figure 1: Number of Latino migrant and non-migrant students in K-12 Texas schools over time, 2003-2015



The ERC data files used for the analyses included: attendance, enrollment, demographic, and graduation data files from TEA, four-year university admissions data files, enrollment and graduation data files for university, community college, and career/technical colleges from the THCEB, and workforce data from the TWC.

Texas Education Agency Data Files

The TEA attendance data file provides attendance information for each school a student is enrolled in. While the attendance data file takes into account each time a student is admitted into a school, the enrollment data file was taken once per year during the snap shot day, usually in October. Although the data files included information on the same students, some students were found in attendance data but not in enrollment data if they missed the snap-shot day. Both TEA enrollment and attendance data files provide demographic information as well as specific traits such as economic status, risk of dropping out, immigration status, and whether the student has college plans. TEA graduation data provides information on student graduation date, type of degree, and if

the student left the school – the reason for departure. The data used in the analyses consists of all Latino students enrolled between 2003 and 2015 in Texas school districts. This time period was used in order to conduct a current analysis of various outcomes for migrant students in the TMEP, as well as to be able to longitudinally follow students from K-16 education through graduate education or the workforce. The TEA data sample consisted of about n=30,907,536 student level observations and 5,191,405 individual students. Out of these, 728,951 observations were migrant students, and 217,437 were individual migrant students.

Texas Higher Education Coordinating Board Data Files

THECB files used in the analyses included the four-year university admissions data, enrollment files from public university, community colleges, and career/technical colleges, and graduation data files for university, community college, and career/technical colleges. The university admissions data captured student level information for student who were admitted and enrolled in a public institution. Variables included applicant and admission information such as household income, single parent household, SAT/ACT scores, and parent's level of education among others. Enrollment files from public university, community colleges, and career/technical colleges (which include private and out-of-state public postsecondary institutions operating in Texas under a Certificate of Authority or a Certificate of Authorization) provide enrollment and demographic data for students by the census date in the semester (usually the 12th day of class). Variables included race/ethnicity, grade/degree classification, major, Semester Credit Hours (SCH) or contact hours, tuition status, residence status, student major, student classification, whether the student was a first time student, financial aid data, among other variables. Graduation data files were also used for university, community college, and career/technical colleges. These files reported information for students who received a degree and/or certificate within the year; and

included information on degree level awarded for each student, employment status post graduation for career/technical school files, among others. Data was available from 2003-2016. TEA data files (enrollment, admissions, and graduation files) were merged and then collapsed to one observation per student in order to capture demographic information including ethnicity, and sex, and school characteristics such as at risk of dropping out of school, economic disadvantage, and eligibility for the TMEP program. The TEA files were then merged with THECB files. In order to analyze and account for changes in variables, TEA data files were merged separately with community college, career and technical school files, and university files, as well as combining all of the THECB files together. Students did not have to be flagged as graduated in the TEA data in order to be merged with THECB files. Since migrant students travel between states migrant students in the TEA data may not have graduated from a Texas high school, but may have returned following graduation and enrolled in postsecondary data. To account for this sample of migrant students, all students who were ever in K-12 data are merged with THECB files using the id2 variable.

The full file containing university, career and technical, and community college data for 2003-2016, consists of a sample of n= 4,468,843 observations, out of which, about 5% were migrant student observations (55,127 individual students) and 4,254,847 were non-migrant student observations (1,044,038 individual students). In the university and TEA merged files, the sample consisted of n=1,498,964 observations, out of which about 5% were former migrant students (24,700 individual migrant students) and 1,429,369 were non-migrants students (460,188 individual students). The community college data consists of a sample of n= 2,765,552, out of which about 5% of observations were migrant students (45,995 individual students) and 2,630,249 were non-migrant students (885,393 individual students). Finally, for career and technical college data, the sample consisted of n = 204,327 observations, of which 5% were migrant student observations (5,671

individual students) and 195,229 were non-migrant student observations (114,788 individual student observations).

Texas Workforce Commission Data Files

TWC data includes variables on quarterly wage, employment sector from North American Industry Classification System (NAICS) and Standard Industrial Classification (SIC), average employees in the industry, county of residency, county of employment, and number of employees. Data used for this analysis included quarterly wages which were summed together to create a yearly wage variable, the NAICS sector code, and year. While the NAICS provides the sector the employee worked in, the position the employee held is not available. For the analysis, TEA and THECB files were merged with TWC data. TEA admissions, enrollment, demographic and graduation data files were used, as well as THECB university admissions data, enrollment data for university, community college, and career and technical schools, and graduation data for university, community college, and career and technical school. One observation per student from both TEA and THECB/TEA files were kept for the analysis. This was the last observation which captured the year that the student left school or graduated. The earliest date students graduated from high school was in 2002. Data was sorted by the student identification number and date of graduation or the last day enrolled. These files were merged with TWC data. The TEA/TWC data sample consisted of n= 11,111,749 observations (4,755,652 were individual students), and about 6% of observations were for former TMEP eligible students (119,102 individuals). The TEA/THECB/TWC data sample consisted of n= 6,622,384 observations (1,044,038 individuals), and out of which about 5% were former TMEP eligible students (55,127 individuals).

DATA CLEANING

TEA files were prepared for analysis (and analyzed) using Stata. Each file for each year was individually prepared. A full explanation is included in the appendix.

Variable Definitions

K-12 Outcome Variables

The first study is focused on chronic and total absenteeism for the Latino migrant and non-migrant population; the variables are defined as follows: the dependent variable *total days absent* is a count variable ranging from 0 to 182 days, and *chronically absent* is a dichotomous 0/1 variable. *Migrant status* is 0 if the student is not eligible for the Texas Migrant Education Program (and consequently not counted as a migrant student) and 1 if the student is eligible and considered a migrant student. It is not possible to distinguish between students who participated versus those who were eligible for the TMEP. Reasons for non-participation in the TMEP include program unavailability in the district, fear of identification as an immigrant, or the program failed to meet student needs. The *year* variable ranges from 2003 to 2015; dummies were created for each year. *Sex* is 0 for Male and 1 for Female. English learner is defined as students who have Limited English Proficiency (LEP) status, Bilingual status, ESL status, or Bilingual/English as a Second Language (ESL) status. Bilingual status "indicates whether the student is participating in a state-approved bilingual education program which is a full-time program of dual-language instruction through the TEKS in the content areas (mathematics, science, health and social studies) in the primary language of LEP students and also for carefully structured and sequenced mastery of English cognitive academic language development" ((19 TAC §89.1210(b) as found in PEIMS, 2015-2016). ESL status is defined as "an English program that serves students identified as students of limited

English proficiency in English only by providing a full-time teacher certified under TEC §29.061(c) to provide supplementary instruction for all content area instruction," or "…to provide English language arts instruction exclusively, while the student remains in a mainstream instructional arrangement in the remaining content area" (PEIMS, 2015-2016). Bilingual/ESL eligible is defined as "whether the student participated in the Bilingual/ESL Summer School program as described in TEC §29.060 and 19 TAC §89.1250. To be eligible for enrollment in the Bilingual/ESL Summer Program, a student must be LEP and must be eligible for admission to kindergarten or first grade at the beginning of the next school year" (PEIMS, 2015-2016). The variable *economically disadvantaged* is a binomial variable where 0 indicates that the student is not economically disadvantaged and 1 indicates the student is economically disadvantaged. This is defined as the student being eligible for free or reduced priced lunch under The National School Lunch And Child Nutrition Program, or a) from a family with an annual income at or below the official federal poverty line, b) eligible for Temporary Assistance to Needy Families (TANF) or other public assistance, c) received a Pell Grant or comparable state program of need-based financial assistance, d) eligible for programs assisted under Title II of the Job Training Partnership Act (JTPA), or e) eligible for benefits under the Food Stamp Act of 1977 (PEIMS, 2015-2016). *At-Risk* status is defined as whether or not a student is currently identified as at-risk of dropping out of school using state-defined criteria such as failing a grade in school, not meeting satisfactory test performance, being expelled from school, being placed in an alternative education program, previously reported as having dropped out of school, the student is pregnant or a parent, the student is homeless, or resides in a shelter, psychiatric hospital, facility, or foster group home. This is also a binomial variable where 0 indicates the student is not at risk and 1 indicates the student is at risk. *Immigrant* status "indicates whether the student is an identified immigrant under the definition found under

Title III of the No Child Left Behind Act of 2001…This should not be confused with immigrant status as defined for the Department of Homeland Security (DHS). Districts should not assume responsibility for determining the extent to which students are legal or illegal immigrants under DHS regulations" (PEIMS, 2015-2016). Immigration status takes on the value of 0 when the student is not an immigrant, and 1 otherwise. Grade level ranges from early education, pre-kindergarten, and kindergarten through 12th grade. Dummy variables were created for each grade level for the analysis, with 8th grade as the reference group. Descriptive statistics are presented in Table 2 and 3.

Table 2: Independent samples t-tests on absenteeism using TEA data

	Migrant Students			Non-Migrant Students			
	n	M	SD	n	M	SD	*t*-test
Total Days Absent	720696	8.91	10.72	30006442	7.47	9.26	1.43(0.01)***
Chronic Absenteeism	728951	0.14	0.35	30167843	0.09	0.29	0.05(0.00)***

Note: The t-statistics are presented with p-values in parentheses.

Table 3: Descriptives of analytic sample, TEA data

Variable	Mean	SD	Min	Max
Migrant Student	0.02	0.15	0	1
Total Days Absent	7.51	9.30	0	179
Chronic Absenteeism	0.10	0.29	0	1
Grade				
Early Education	0.01	0.08	0	1
Pre Kindergarten	0.06	0.24	0	1
Kindergarten	0.08	0.27	0	1
Grade 1	0.08	0.28	0	1
Grade 2	0.08	0.27	0	1
Grade 3	0.08	0.27	0	1
Grade 4	0.08	0.26	0	1
Grade 5	0.07	0.26	0	1
Grade 6	0.07	0.26	0	1
Grade 7	0.07	0.26	0	1
Grade 8	0.07	0.26	0	1
Grade 9	0.08	0.27	0	1
Grade 10	0.06	0.24	0	1
Grade 11	0.05	0.23	0	1
Grade 12	0.05	0.22	0	1
Sex				
Female	0.49	0.50	0	1
English Learner Status				
English Learner	0.34	0.47	0	1
Socioeconomic Status				
Economically Disadv.	0.81	0.39	0	1
At-Risk	0.66	0.47	0	1
Immigrant	0.03	0.17	0	1

N=30,907,536

Postsecondary Variables

The second study on postsecondary outcomes included three main dependent variables: SAT Score, Level of degree obtained, and STEM major.

The discrete variable SAT composite scores range from 0 to 1600 points. SAT scores were captured in THECB university data admissions, which was verified by the College Board.

The dependent variable *level of degree* obtained was sorted into the following categories:

1. University data: associate, bachelors, and graduate (masters, Ph.D., other graduate degrees)
2. Community College data: curriculum completer, certificate, associate and bachelor's degree.
3. Career and Technical School Data: certificate, associate, bachelors, and graduate.

The *STEM major* binomial 0/1 variable combined all specific major groups that apply to the STEM major category (The Department of Homeland Security, 2012). Majors designated as part of the STEM roster include majors such as poultry science and management science and quantitative methods.

The main independent variable used for all of the postsecondary analyses was the binomial 0/1 variable that captured whether the student was formally a migrant student. If the student was eligible for the TMEP prior to attending postsecondary education, they were flagged as a migrant student in the analysis. Dummy variables were created for *student classification* which included freshman, sophomore, junior, senior, bachelors, masters, and Ph.D. which allowed the STEM major analyses to be split into undergraduate and graduate students. SAT and ACT scores were captured in university data admissions, which was verified by the College Board. They were used for the analyses 'level of degree attained' and 'odds of majoring in a STEM field'. For the SAT score analyses variable only available in THECB public university admissions data were used. These included dummy variables for *family gross income* which is defined categorically: less than $20,000, between $20,000 and $79,999, and over $80,000. This encompassed both untaxed and taxed income from the most recent tax year, as reported on the Common Application for Admissions. Also included were mother and father's education variable dummies for no high school education, some high school or high school diploma which included high school diploma or GED, some college or college which included associates degree and a bachelors degree, and graduate or professional school degree. This was also self-reported by the on the Common

Application for Admissions. Single parent household was reported by the student in the Common Application for Admission. Additionally, whether a student was admitted and enrolled through the top 10% admissions rule. This rule was created in 1997 through Texas House Bill 558. House Bill 558 requires that Texas public colleges and universities automatically admit any student who graduated in the last two years with a grade point average that in the top 10% of the students graduating high school class and before the institutions filling deadline (Top 10% Rule, 1997). Admissions to public colleges and universities in Texas through the top 10% rule is an indicator of a student's class rank, and thereby the competitiveness of the student compared to his/her peers.

Other control variables included in the analyses were defined in the same way as for the first analysis on chronic absenteeism including: the binomial 0/1 variables *economically disadvantaged*, *at risk of dropping out of school*, *immigrant, chronic absenteeism, English Learner* (defined as being in bilingual education, LEP, ELS, or ELL programs), and *college plans*. These variables originated from TEA data. Table 4 presents descriptives of the analytic sample for SAT score. Tables 5 and 6 present descriptives of the analytic sample for the STEM major analysis, and Tables 7, 8, and 9 present descriptive for degree level awarded by university data, community college, career/technical school data respectively.

Table 4: Descriptives of analytic sample, THECB University Admissions Data

Variable	Mean	SD	Min	Max
SAT Score	961.79	164.84	47	1600
Migrant Indicator	0.04	0.20	0	1
English Learner	0.05	0.21	0	1
Immigrant	0.02	0.14	0	1
Sex	0.57	0.50	0	1
Top 10% Admissions	0.22	0.41	0	1
At-Risk of Dropping Out	0.28	0.45	0	1
Economically Disadvantaged	0.58	0.49	0	1
Mother's Level of Education				
Unknown	0.03	0.16	0	1
No High School	0.01	0.11	0	1
Some High School or Degree	0.03	0.16	0	1
Some College of Degree	0.03	0.17	0	1
Graduate School	0.01	0.07	0	1
Father's Level of Education				
Unknown	0.03	0.16	0	1
No High School	0.01	0.11	0	1
Some High School or Degree	0.03	0.16	0	1
Some College of Degree	0.02	0.16	0	1
Graduate School	0.01	0.08	0	1
Single Parent Household	0.09	0.29	0	1
Family Income				
Less than $20,000	0.27	0.44	0	1
Between $20K-$80K	0.15	0.36	0	1
Greater than $80,000	0.44	0.50	0	1
N=96735				

Table 5: Independent samples t-tests on STEM major pursuits using THECB data

	Migrant Students			Non-Migrant Students			
	n	M	SD	n	M	SD	t-test
STEM Major	185250	0.31	0.44	3725825	0.26	0.46	0.04(0.01)***

Table 6: Descriptives of analytic sample; STEM

Variable	Mean	SD	Min	Max
Migrant	0.05	0.21	0	1
STEM Major	0.27	0.44	0	1
English Learner	0.08	0.27	0	1
Econ. Disadvantaged	0.63	0.48	0	1
At Risk	0.42	0.49	0	1
Immigrant	0.02	0.14	0	1
Sex	0.57	0.50	0	1
Chronically Absent	0.21	0.41	0	1
ACT Score	8.36	10.19	0	48
SAT Score	596.77	494.16	0	1660
Mother's Education				
Education unknown	0.02	0.15	0	1
Didn't finish high school	0.01	0.09	0	1
Finished high school	0.02	0.13	0	1
College education/degree	0.02	0.14	0	1
Graduate Education	0.00	0.06	0	1
Father's Education				
Education unknown	0.02	0.15	0	1
Didn't finish high school	0.01	0.09	0	1
Finished high school	0.02	0.13	0	1
College education/degree	0.02	0.13	0	1
Graduate Education	0.00	0.06	0	1
Single Parent Household	0.07	0.26	0	1
N= 3911075				

Table 7: Descriptives of Analytic Sample; Degree Level Awarded, University

Variable	Mean	SD	Min	Max
Level of Degree	0.99	1.09	0	3
Associates	0.00	0.03	0	1
Bachelors	0.87	0.34	0	1
Masters	0.12	0.32	0	1
PhD	0.01	0.11	0	1
Graduate Degree	0.00	0.03	0	1
Migrant Indicator	0.05	0.21	0	1
English Learner	0.05	0.22	0	1
Immigrant	0.02	0.14	0	1
Sex	0.57	0.50	0	1
STEM	0.34	0.47	0	1
Top 10% Admission	0.14	0.34	0	1
At-Risk of Dropping out	0.30	0.46	0	1
Economically Disadvantage	0.59	0.49	0	1
Mother's Education				
Unknown	0.13	0.33	0	1
No High School	0.03	0.18	0	1
High School	0.07	0.26	0	1
College/Degree	0.08	0.27	0	1
Graduate	0.01	0.11	0	1
Father's Education				
Unknown	0.13	0.34	0	1
No High School	0.04	0.19	0	1
High School	0.08	0.26	0	1
College/Degree	0.07	0.25	0	1
Graduate	0.01	0.12	0	1

N=1498964

Table 8: Descriptives of Analytic Sample; Degree Level Awarded, Community College

Variable	Mean	SD	Min	Max
Degree Level Awarded				
Curriculum	0.34	0.47	0	1
Certificate	0.24	0.43	0	1
Associates	0.42	0.49	0	1
Bachelors	0.00	0.05	0	1
Migrant Indicator	0.05	0.22	0	1
English learner	0.09	0.28	0	1
Immigrant	0.02	0.14	0	1
Sex	0.57	0.50	0	1
STEM Major	0.28	0.45	0	1
At-Risk	0.48	0.50	0	1
Economically Disadvantaged	0.66	0.48	0	1
N=2765552				

Table 9: Descriptive Analytics; Degree Level Awarded, Career/Technical School

Variable	Mean	SD	Min	Max
Degree Level Awarded	0.82	0.89	0	4
Migrant Ind.	0.04	0.21	0	1
English Learner	0.13	0.33	0	1
Immigrant	0.02	0.13	0	1
Sex	0.62	0.48	0	1
STEM Major	0.22	0.41	0	1
At-Risk of dropping out	0.70	0.46	0	1
Economically Disadvantaged	0.74	0.44	0	1
N=204327				

Workforce Variables

The main dependent variables for this analysis were annual wage and agricultural flag. The agricultural flag is a binomial 0/1 variable, which captures if the employee worked in the agricultural sector for each year. Annual wages were calculated annually for each person, and a log of wages was used in the regression.

Independent variables included in the analysis were dummy variables that captured the major sectors in NAICS, including: travel and accommodation, food services, administrative support services, stores, wholesales businesses, or trade, manufacturing, construction, mining, gas, oil, and water, repair and maintenance, and public administration. The full list is available in Table 10. Other independent variables for the TEA/TWC analysis included sex, English learner, economically disadvantaged, at-risk of dropping out of school, and an immigrant indicator. These TEA variables are defined as they were in the chronic and total absenteeism study

For the THECB/TWC analysis, along with the TEA variables, THECB variables were included for college plans, chronic absenteeism, STEM major, ACT and SAT scores, and an indicator for a single parent household. Also, degrees for certificate, associates, bachelors, graduate, or any degree categories were incorporated in the analysis. These variables were defined in the same way as in the postsecondary data. Since the definitions for each degree awarded changed between university, community college, and career/technical school, individual degree variables were created which captured and integrated the differences between school categories. Tables 10, 11, 12, 13, 14, 15, 16, 17, and 18 provide descriptive statistics for the analytic sample.

Table 10: Descriptives of Analytic Sample, NAICS Sector

Variable	Mean	SD	Min	Max
Agriculture/Forestry	0.01	0.07	0	1
Admin. Support Services	0.08	0.28	0	1
Stores/Wholesale/Trade	0.28	0.45	0	1
Manufacturing	0.03	0.17	0	1
Construction	0.03	0.17	0	1
Mining, Oil, Gas, Water	0.01	0.10	0	1
Repair and Maintenance	0.01	0.09	0	1
Public Administration	0.02	0.15	0	1
Personal Laundry	0.02	0.15	0	1
Organizations	0.01	0.10	0	1
Private Household	0.00	0.04	0	1
Accommodation/Travel	0.28	0.45	0	1
Food	0.23	0.42	0	1
Waste management	0.00	0.03	0	1
Education and Training	0.06	0.23	0	1
Health Care	0.05	0.22	0	1
Social Assistance	0.02	0.14	0	1
Amusement and Recreation	0.03	0.17	0	1
Publishing	0.00	0.04	0	1
Movie and Sound	0.01	0.09	0	1
Broadcasting and Media	0.01	0.08	0	1
Data Information	0.00	0.04	0	1
Banking and Finance	0.03	0.16	0	1
Insurance	0.01	0.08	0	1
Trust Funds	0.00	0.01	0	1
Real estate	0.01	0.12	0	1
Professional/Technological and Scientific Services	0.04	0.19	0	1
Management of Companies	0.00	0.04	0	1
Transport	0.01	0.09	0	1
Postal Delivery/Currier	0.00	0.07	0	1
Warehouse	0.00	0.04	0	1
N=1188390				

Table 11: Independent sample t-tests on agriculture sector using TEA-TWC Data

	Non-Migrant			Migrant			
Agriculture	N	M	SD	N	M	SD	t-test
Sector	10466493	0.007	0.82	645256	0.05	0.214	-0.04(0.000)***

Table 12: Descriptives of Analytic Sample for Agriculture Sector; TEA-TWC Data

Variable	Mean	SD	Min	Max
Migrant Indicator	0.06	0.23	0	1
Graduated	0.66	0.47	0	1
Chronic Absenteeism	0.40	0.49	0	1
At Risk of Dropping Out	0.64	0.48	0	1
Economically Disadvantaged	0.71	0.45	0	1
English Learner	0.14	0.35	0	1
Sex	0.48	0.50	0	1
Immigrant	0.02	0.14	0	1
N=11111749				

Table 13: Independent sample t-tests on log of annual wages using TEA-TWC Data

	Non-Migrant			Migrant			
	N	M	SD	N	M	SD	T-Test
Log Annual Wage	10462226	8.85	1.47	644975	8.72	1.52	0.12(0.002)***

Table 14. Descriptives of Analytic Sample for Annual Wage; TEA-TWC Data

Variable	Mean	SD	Min	Max
Log Annual Wage	8.84	1.47	2.30	16.46
Migrant Indicator	0.06	0.23	0	1
Age	21.52	3.61	14	31
Age^2	476.26	162.27	196	961
Number of Years Post Graduation	6.50	3.66	0	13
Chronically Absent	0.40	0.49	0	1
At Risk of Dropping Out	0.64	0.48	0	1
Economically Disadv.	0.71	0.45	0	1
English Learner	0.14	0.35	0	1
Sex	0.48	0.50	0	1
Immigrant	0.02	0.14	0	1
Sectors*				
N=11111749				

*All Sectors were included in analysis. Summary Statistics are available in Table 6

Table 15: Independent sample t-tests on agriculture sector using THECB-TWC Data

	Non-Migrant			Migrant			
	N	M	SD	N	M	SD	*t*-test
Agriculture Sector	6217092	0.004	0.063	331172	0.029	0.17	0.03(0.00)***

Table 16: Descriptives of Analytic Sample for Agriculture Sector; THECB-TWC Data

Variable	Mean	Std. Dev.	Min	Max
Agriculture Sector	.0053352	.072847	0	1
Migrant Indicator	.0506236	.2192279	0	1
Graduated	.2413213	.4278847	0	1
Age	20.78833	3.88751	0	111
Chronically Absent	.2958626	.4564296	0	1
At Risk of Dropping Out	.5315255	.4990052	0	1
Economically Disadvantaged	.6607238	.4734637	0	1
English Learner	.0820538	.2744467	0	1
Sex	.5440343	.4980572	0	1
Immigrant	.0173883	.1307131	0	1
Postsecondary Degree	.0754989	.2641947	0	1
N=6622384				

Table 17: Independent sample t-tests on log of annual wages using THECB-TWC Data

	Non-Migrant			Migrant			
	N	M	SD	N	M	SD	*t*-test
Log Annual Wage	6214723	8.95	1.42	331039	8.85	1.46	0.10(0.003)***

Table 18: Descriptives of Analytic Sample for Log of Annual Wage; THECB-TWC Data

Variable	Mean	SD	Min	Max
Log Annual Wage	8.94	1.42	2.3	15.75
Migrant Indicator	0.05	0.22	0	1
Age	20.79	3.89	0	111
Age2	447.27	180.03	0	12321
Graduated	0.24	0.43	0	1
English Learner	0.08	0.27	0	1
Economically Disadvantaged	0.66	0.47	0	1
At-Risk of Dropping Out	0.53	0.50	0	1
Chronically Absent	0.30	0.46	0	1
Immigrant	0.02	0.13	0	1
Single Parent Household	0.07	0.26	0	1
STEM Major	0.46	0.50	0	1
ACT Score	7.09	9.48	0	36
SAT Score	513.91	484.89	0	1600
Certificate	0.03	0.16	0	1
Associate's Degree	0.01	0.11	0	1
Graduate Degree	0.01	0.09	0	1
Any Degree	0.08	0.26	0	1
Sectors*				
N=6622384				

*All Sectors were included in analysis. Summary Statistics are available in Table 6

ESTIMATION

For the studies on chronic and total absenteeism, estimations were conducted that considered the effects of TMEP eligibility on chronic absenteeism and total absenteeism. The two dependent variables *total days absent* and *chronic absenteeism* are a count variable and a dichotomous variable respectively. The variable *total days absent* has an excess of zero observations, which suggests that excess zeros are generated by a separate process from the count values. Therefore, this separate process is estimated independently using the zero inflated Poisson (ZIP) regression model. A logistic regression was used to estimate chronic absenteeism. These analyses compared total days absent and chronic absenteeism for the migrant and non-migrant

population, controlling for other variables in the model. Models were run for individual years 2003, 2007, 2011, and 2015, equally distributed throughout the time period through which data is available. Annual analyses were conducted in order to simplify interpretation of results.

Since data is available for years 2003-2015, panel data with fixed effects models were used to analyze the longitudinal effects of migrant status and eligibility on total days absent and chronic absenteeism. In theses analyses, migrant students who switched eligibility for the TMEP were compared to themselves. Standard errors were clustered around the individual. A Poisson regression and conditional fixed effects logistics regression were used. The panel data analysis with fixed effects compares how students who switched in and out of the TMEP fared when they were and were not eligible for the program in regards to total days absent and chronic absenteeism. An intent-to-treat estimation was conducted by dividing the coefficient of the estimate by the percentage of people who participated in the study which extends to about 75% of students in Texas (U.S. Department of Education, 2013).

The postsecondary outcome *SAT score* is a discrete variable which was estimated for years 2005, 2007, 2009, and 2011 using an OLS regression. *Degree level award* was estimated using an ordered logistic regression run individually for years 2004, 2008, 2012, and 2016. Since *degree level award* is a hierarchal categorical variable, an ordered logistic regression was able to capture the odds of attaining a level of degree as compared to the other degrees in the analysis. The binomial (0/1) variable STEM major was estimated using a logistic regression for undergraduate students attending public university. Individual year analyses were conducted for 2008, 2011, 2013, and 2015.

A logistic regression was used for the binomial variable agricultural flag to determine the odds of former migrant students remaining in the agriculture sector following graduation. A logistic

regression was estimated for years 2004, 2008, 2012, and 2016 for TEA-TWC data, providing results on evenly distributed years rather than averaging results together for all years. A second analysis was conducted for years 2008, 2010, 2013, and 2016 using THECB-TWC data in order to account for time needed to graduate from postsecondary education.

The log of annual wages was estimated using OLS regression. Estimating absolute changes in wages may result in estimating negative wages since a wage distribution is truncated at zero and highly rightly skewed. Mincer (1958) proposed that personal incomes are not normally distributed but that a logarithm of income is symmetric and provides a good estimation of normality. In human capital models, wages increase due to increased training by way of education and experience. The log of wages provides estimation in percent rather than absolute term.

For the TEA/TWC and the THECB/TWC analyses, a natural log of annual wages was estimated for 2004, 2008, 2012, and 2016, and 2008, 2010, 2013, and 2016 respectively. Earlier years were not estimated for THECB-TWC data since the earliest cohort graduated from high school in 2003 from high school, and an analysis beginning in 2008 provided a sample of workers who had time to enter the workforce post graduation. An age and age-squared variable were included in both models. As Mincer (1958) pointed out, earnings are not only greater with age, but increase more rapidly with age (or decrease more gradually after the peak of earnings is reached). The age-squared variables explains how the relationship between wage and age changes for each additional year. A control variable indicating whether the student had graduated from postsecondary education was included in the regression estimations, and variable indicating the number of years since finishing school was included in the TEA-TWC regression. A graduation variable was not included in the TEA-TWC regression due to collinearity with age.

Logistic Regression

Logistic regression is a useful technique when predicting a dichotomous outcome. Logistic regression is well suited for categorical outcome variables and categorical or continuous predictor variables. The logistic regression applies the logit transformation to the dependent variable. The model predicts the logit of Y from X which is the natural log of odds of Y, and the odds are the probability of Y happening to the probability of Y not happening (Peng, Lee, & Ingersoll, 2002).

The odds of a student being chronically absent, choosing a STEM major, receiving admission through top 10%, or working in the agricultural sector are calculated using a logistic odds ratio. The natural log odds of an event occurring are dependent on the predictor variables in the model. Robust standard errors were used in all models.

$$\text{In}\,[\text{odds}(Y_{it} = 1)] = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it\ldots} + \beta_k X_{kit} + e_{it}$$

Chronic Absenteeism

$$\text{In}\,[\text{odds}(ChronicAbsenteeism_{it} = 1)] = \beta_0 + \beta_1 MigrantStatus_{it} + \beta_2 Sex_{it} + \beta_3 LEP_{it} + \beta_4 ESL_{it} + \beta_5 BilingualEd_{it} + \beta_6 BilingualESL_{it} + \beta_7 EconStatus_{it} + \beta_8 AtRisk_{it} + \beta_9 Immigrant_{it} + \beta_{10} GradeLevel_{it} + e_{it}$$

For the first model, Y denotes chronic absenteeism for each person *i* for time *t*, β_0 represents the intercept, the X's are defined as: eligibility for the TMEP, ethnicity, sex, LEP status, ESL status, bilingual education status, bilingual/ESL summer school status, whether a student is economically disadvantaged, whether a student is at-risk of dropping out, immigration status, and dummy variables for the grade levels. The error term is represented by *e*.

STEM Major

$$\ln[\text{odds}(STEM_{it}=1)] = \beta_0 + \beta_1 MigrantStatus_{it} + \beta_2 ChronicallyAbsent_{it} + \beta_3 SAT_{it} + \beta_4 ACT_{it} + \beta_5 ParentEducation_{it} + \beta_6 EnglishLearner_{it} + \beta_7 EconStatusr_{it} + \beta_8 AtRisk_{it} + \beta_9 SingleParentHH_{it} + \beta_{10} Immigrant_{it} + \beta_{11} Sex_{it} + e_{it}$$

In this model, Y denotes whether the student was enrolled in a STEM major for each person *i* for time *t*, β_0 represents the intercept, the X's are defined as: eligibility for the TMEP, whether the student was chronically absent in K-12, SAT score, ACT score, mother and father's level of education, English learner, whether a student is economically disadvantaged, whether a student is at-risk of dropping out, whether the student came from a single parent household, immigration status, and sex (1=female). The error term is represented by *e*. The estimations were conducted separately for students in undergraduate and graduate school as noted by the student classification variable. Students who were freshman, sophomores, juniors, and seniors were categorized as undergraduates. Students in masters and PhD programs were categorized as graduate students.

Agriculture Sector

$$\ln[\text{odds}(Agriculture_{it}=1)] = \beta_0 + \beta_1 MigrantStatus_{it} + \beta_2 Graduated_{it} + \beta_3 ChronicAbsenteeism_{it} + \beta_4 AtRisk_{it} + \beta_5 EconStatusr_{it} + \beta_6 EnglishLearner_{it} + \beta_7 Sex_{it} + \beta_8 Immigrant_{it} + e_{it}$$

In this model using TEA/TWC data, Y denotes whether the person worked in the agricultural field for each person *i* for time *t*, β_0 represents the intercept, the X's are defined as: formally eligible for the TMEP, whether the student graduated from high school, chronic absenteeism in K-12, whether a student was at-risk of dropping out, whether a student was economically disadvantaged, formally English language learner, sex (1=female), and whether a student was considered an immigrant while in K-12. The error term is represented by *e*.

$$\ln[\text{odds}(Agriculture_{it} = 1)] = \beta_0 + \beta_1 MigrantStatus_{it} + \beta_2 Graduated_{it} + \beta_3 ChronicAbsent_{it} + \beta_4 AtRisk_{it} + \beta_5 EconStatus_{it} + \beta_6 EnglishLearner_{it} + \beta_7 Sex_{it} + \beta_8 Age_{it} \beta_9 Immigrant_{it} + \beta_{10} PostSecondaryDegreee_{it}$$

In this THECB/TWC model, Y denotes whether the person worked in the agricultural field for each person *i* for time *t*, β_0 represents the intercept, the X's are defined as: formally eligible for the TMEP, whether the student graduated from a university, college, or career/technical school, whether the person was chronically absent in K-12, whether a student was at-risk of dropping out in K-12, whether a student was economically disadvantaged, formally English language learner, sex (1=female), age, whether a student was considered an immigrant while in K-12, and a variable for whether the student attained any postsecondary degree. The error term is represented by *e*.

Zero Inflated Poisson Regression

The count variable *total days absent* was estimated and compared using both a Poisson regression and a ZIP regression model. In Stata, the ZIP model was estimated with the Vuong test option[4]. A Poisson model is ideal for count data where the possible values of Y (dependent variable) are non-negative integers, the values are highly skewed, have heteroscadastic error terms, and the count values do not depend on one another. However, the data indicates an excess of zero observations, which suggests that excess zeros are generated by a separate process from the count values. Therefore, the ZIP regression has two parts, a Poisson model and a logit model for predicting excess zeros. A ZIP model with a Vuong test was conducted to determine whether a ZIP model would provide a better fit for the count variable. The Vuong test resulted in a positive z-score that was statistically significant ($P < 0.001$) for each individual year, resulting in the conclusion that

[4] The Vuong option provides a statistical test comparing the ZIP model with an ordinary Poisson model. A significant z-test indicates that the zero-inflated model is better (UCLA: Institute for Digital Research and Education, 2017).

a ZIP model provides a better fit for the data.

The ZIP regression model assume that some zeros observed in the *total days absent* variable can be modeled by a Poisson process, while others can be modeled by a logistic process that identifies the students who would not consider to be absent in the first place. So there are two processes at work—one that determines if the individual is even eligible for a non-zero response, and the other that determines the count of that response for eligible individuals. For both the Poisson process and the logistic process of the ZIP regression, the same variables were used for both.

$$\text{Poisson: } \mu\_\text{TotalDaysAbsent}_i = \exp(\beta_0 + \beta_1 MigrantStatus_i + \beta_2 Ethnicity_i + \beta_3 Sex_i + \beta_4 EnglishlanguageLearner_i + \beta_5 EconStatus_i + \beta_6 AtRisk_i + \beta_7 Immigrant_i + \beta_8 GradeLevel_i)$$

$$\text{Logistic: } \ln[\text{odds}(ChronicAbsenteeism_i = 1)] = \beta_0 + \beta_1 MigrantStatus_i + \beta_2 Ethnicity_i + \beta_3 Sex_i + \beta_4 EnglishlanguageLearner_i + \beta_5 EconStatus_i + \beta_6 AtRisk_i + \beta_7 Immigrant_i + \beta_8 GradeLevel_i + e_i$$

In the model, μ denotes total days absent and chronic absenteeism for each person i, β_0 represents the intercept, the X's are defined as: eligibility for the TMEP, ethnicity, sex, English language learner (LEP status, ESL status, Bilingual education status, or Bilingual/ESL summer school status), whether a student is economically disadvantaged, whether a student is at-risk of dropping out, immigration status, and dummy variables for the grade levels. The error term is represented by e.

Panel Data With Fixed Effects

In panel data, individuals are observed in various points in time. Schmidheiny (2016) states that panel data is most useful when it is suspected that the dependent variable depends on unobserved explanatory variables which are correlated with observed explanatory variables. If such

unobserved variables are constant over time, the panel data estimators allow for estimation of the effect of observed variables (p. 1). Time invariant unobserved variables were accounted for in the dataset, by setting the data as panel for up to twelve years of data per student. Next, Poisson regressions and logistic regressions with fixed effects were conducted over the panel data of individual students. The fixed effects method controls for time-invariant variables that have not been measured but that affect the dependent variable. In Stata, the xtpoisson and clogit commands were used to perform this analysis. For xtpoisson (Poisson fixed effects regression), the data was estimated with robust standard error and with the incidence rate ratio option, to ease interpretation. For clogit (conditional fixed effects logistic regression), the outcomes were interpreted as odds ratios, clustered around the individual.

Ordered Logistic Regression

An ordered logit with the odds ratio option was used to estimate the odds of earning a level of degree at a postsecondary institution as compared to the other categories in the variable.

When a dependent variable has more than two categories and the values of each category have a meaningful sequential order where a value is indeed 'higher' than the previous one, then we can use ordered logit (ologit). We can modify the binary logistic regression model to incorporate the ordinal nature of a dependent variable by defining the probabilities differently. Instead of considering the probability of an individual event, we consider the probability of that event and all events that are ordered before it (Norusis, 2011). If an ordered event Y occurs with score *s,* then the probability of such an event taking place is equal to the sum of the probability of score *s* and the probabilities of all scores less than *s*.

$P(Y = s) = P(\text{score} \leq s)$

The ologit model predicts the logit of Y from X which is the natural log of odds of Y. The odds are

the probability of Y happening to the probability of Y not happening.

$$\ln [\text{odds}(Y_{it} = s)] = \ln [P(\text{score} \leq s)/ P(\text{score} > s)] = \beta_s - \beta_1 X_{1it} - \beta_2 X_{2it} - \ldots - \beta_k X_{kit} + e_{sit}$$

Y denotes the ordered event for each person *i* for time *t*, β_s represents the threshold value. Each event has its own β_s term but they all share the rest of β coefficients.

Since degree types varied for community college, career and technical school, and university data files, three separate analyses were conducted. While the categories of the degrees change, the independent variables remained constant throughout the 3 analyses. When students had multiple degrees, the highest level of degree attained for each student was used. Community college categories for *level of degree awarded* included core curriculum completer, certificate, and associates or bachelor's degree. In career and technical school, categories of *level of degree awarded* included certificate, associates, bachelors, and graduated degree. For public university data files, *level of degree* awarded included an associate's degree, a bachelor's degree, and a graduate degree.

$$\ln [\text{odds}(\text{DegreeAwarded}_{ijt}=S)] = \ln [P(\text{DegreeAwarded}_{ijt} \leq S)/P(\text{DegreeAwarded}_{ict}>S)] = \beta_s - \beta_1 MigrantStatus_{it} + \beta_2 EnglishLearner_{it} + \beta_3 Immigrant_{it} + \beta_4 Sex_{it} + \beta_5 STEM_{it} + \beta_6 AtRisk_{it} + \beta_7 EconStatus_{it} + (\beta_8 Top10\%Admission_{it} + \beta_9 MothersEducation_{it} + \beta_{10} FathersEducation_{it}) + e_{it}$$

In this model, Y denotes the degree level awarded for each person *i* for time *t*, β_s represents the threshold value, the X's are defined as: eligibility for the TMEP, English learner, immigration status, sex (1=female), STEM major, whether a student is at-risk of dropping out, whether a student is economically disadvantaged. For university data, variables were included for whether the student was admitted through the top 10% rule, and mother and father's level of education. The error term is represented by *e*.

OLS regression

The following OLS regression formulas were used in the analyses for SAT score and log of wages.

$$Y_{it}=\beta_0+\beta_1 X_{1it}+\beta_2 X_{2it}+....\beta_k X_{kit}+ e_{i\ t}$$

SAT Scores

$$SATscore_{it}=\beta_0+{}_1 MigrantStatus_{it}+\beta_2 EnglishLearner_{it}+\beta_3 Immigrant_{it}+\beta_4 Sex_{it}+\beta_5 Top10\%_{it}+$$
$$\beta_6 AtRisk_{it}+\beta_7 EconStatus_{it}+\beta_{10} MothersEducation_{it}+\beta_{11} FathersEducation_{it}+\beta_{11} SingleParentHo$$
$$usehold_{it}+\beta_{11} HouseholdIncome_{it}+e_{it}$$

In this model, Y denotes the SAT score for year person *i*, over time *t.* β_0 represents the intercept, the X's are defined as: formally eligible for the TMEP, English Learner status, immigration status, sex, top 10% admission, whether the person was at-risk of dropping out in K-12, whether the person was economically disadvantaged in K-12, mother and father's level of education, and whether the student lived in a single parent household. The error term is represented by *e*.

Wage Data for TEA/TWC

$$Ln\_AnnualWage_{it}=\beta_0+\beta_1 MigrantStatus_{it}+\beta_2 Age_{it}+\beta_3 Age^2{}_{it}$$
$$+\beta_4 NumberYearsPostGrad_i+\beta_5 ChronicAbsent_{it}+\beta_6 AtRisk_{it}+\beta_7 EconStatus_{it}$$
$$+\beta_8 EnglishLearner_{it}+\beta_9 Sex_{it}+\beta_{10} Immigrant_{it}+\beta_{11} NAICS\_Sectors_{it}+e_{it}$$

In this model, Y denotes the log of annual wages for each person *i*, for time *t.* β_0 represents the intercept, the X's are defined as: formally eligible for the TMEP, age, age-squared, number of years post high school, chronic absenteeism, whether the person was at-risk of dropping out in K-12, whether the person was economically disadvantaged in K-12, formally English language learner,

sex (1=female), and whether a student was considered an immigrant while in K-12,, and dummy variables for NACIS categories. The error term is represented by *e*.

Wage Data for THECB/TWC

The following OLS regression formula was used for the THECB/TWC analysis:

$$Ln\_AnnualWage_{it} = \beta_0+\beta_1 MigrantStatus_{it} +\beta_2 Age_{it} +\beta_3 Age^2_{it} +\beta_4 Graduated_{it} +\beta_5 EnglishLearner_{it} +\beta_6 EconStatus_{it} +\beta_7 AtRisk_{it} + \beta_8 SingleParentHH_{it} +\beta_9 ChronicAbsent_{it} +\beta_{10} Immigrant_{it}+ \beta_{11} Sex_{it} + \beta_{12} STEM_{it}+\beta_{13} Certificate_{it}+\beta_{14} Associate_{it} +\beta_{15} Bachelors_{it} + \beta_{16} GraduateDeg_{it}+\beta_{18} AnyDeg_{it}+\beta_{20} NAICS\_Sector_{it} +e_{it}$$

In this model, Y denotes the log of annual wages for each person *i* for time *t*, β_0 represents the intercept, the X's are defined as: formally eligible for the TMEP, age, age-squared, whether the student graduated from university, English learner status, whether the person was economically disadvantaged in K-12, whether the person was at-risk of dropping out in K-12, single parent household in K-12, chronic absenteeism in K-12, whether a student was considered an immigrant while in K-12, sex (1=female), STEM major in college, ACT scores, SAT scores, variables for degree type – associates, bachelors, graduate degree, or any degree, race/ethnicity, and NAICS sectors were included. The error term is represented by *e*.

Chapter 4: Findings

This chapter presents the outcomes of the analyses. The chapter is organized as follows: The first section is focused on K-12 outcomes and answers research question 1: what are the rates of school absenteeism and the odds of chronic absenteeism for Latino migrant students in Kindergarten through 12th grade compared to the non-migrant Latino population? Furthermore, what effect does enrollment in the TMEP, have on absenteeism and chronic absenteeism of Latino migrant students? The second section on postsecondary outcomes responds to question 2: for Latino migrant and non-migrant students, contingent on being admitted to and enrolling in public university in Texas, what are outcomes for SAT scores? For Latino migrant and non-migrant students, contingent on attending university, community college, or career school, what is the level of degree obtained? For Latino migrant and non-migrant undergraduate students, contingent on attending public university in Texas, what are the odds of enrolling in a STEM major? Finally, the third section on labor market outcomes responds to question 3: What are the differences in the odds of working in agricultural labor and in annual wages for Latino migrant and non-migrant students who attended either K-12 or postsecondary school in Texas?

K-12 Outcomes

Absenteeism

Research question 1: what are the rates of school absenteeism and the odds of chronic absenteeism for Latino migrant students in Kindergarten through 12th grade compared to the non-migrant Latino population?

On average, according to the data, Latino TMEP students missed 8.9 days, while non-TMEP Latino students missed 7.4 days. Fourteen percent of Latino TMEP students were chronically

absent while 9% of non-TMEP Latino students were chronically absent. This is statistically significant ($P < 0.05$).

Zero inflated Poisson regression with the incidence rate ratio option was used to answer the first question. For years 2003, 2007, 20011, and 2015 the expected incidence rate ratio of total days absent for Latino TMEP students was up to 27% higher than for non-TMEP Latino students, controlling for all other variables in the regression including: sex, English learner status (categorized as LEP, ELL, ESL, bilingual, or bilingual/ESL), socioeconomic status, immigrant status, and the grade the student is enrolled in (with 8^{th} grade as the reference category). This mean that depending on the year and controlling for factors such as socioeconomic status, immigration status, and English learner status, Latino TMEP students have between 5% and 27% higher rates of absenteeism than non-migrant Latino students. This translates to Latino TMEP students missing up to 1.77 more days of school than non-TMEP Latino students. The results discussed are statistically significant ($P<0.001$). Estimations are presented in Table 19.

Table 19: Zero Inflated Poisson Regression, Total days absent by Latino migrant status

Total Days Absent	2003	2007	2011	2015
Migrant Indicator	1.048***	1.112***	1.240***	1.277***
	(0.00390)	(0.00585)	(0.00202)	(0.00223)
Sex				
Female	1.003	1.004*	1.009***	1.007***
	(0.00169)	(0.00156)	(0.000473)	(0.000448)
English Learner Status				
English Learner	0.929***	0.808***	0.750***	0.739***
	(0.00233)	(0.00173)	(0.000442)	(0.000402)
Socioeconomic Status				
Economically Disadvantaged	1.059***	1.163***	1.250***	1.313***
	(0.00226)	(0.00238)	(0.000852)	(0.000879)
At-Risk of Dropping Out	1.391***	1.381***	1.321***	1.247***
	(0.00256)	(0.00246)	(0.000763)	(0.000714)
Immigration Status				
Immigrant	0.740***	0.799***	0.839***	0.921***
	(0.00314)	(0.00346)	(0.00156)	(0.00164)
Grade[5]				
Constant	7.30***	6.97***	6.42***	6.56***
	(0.0265)	(0.008)	(0.007)	(0.007)
N	1811324	2132711	2455467	2706616

Note. Exponentiated coefficients; Standard errors in parentheses.
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$
◆The sample for each year includes all Latino students in that year between 'early education and 12th grade' in Texas who attended Texas public schools.

Odds ratio logistic regression was used to estimate chronic absenteeism between the Latino TMEP and non-TMEP students in K-12 for years 2003, 2007, 2011, and 2015. Depending on the year the odds of chronic absenteeism for Latino TMEP students are up to 82% higher than for non-TMEP Latino students, controlling for all other variables in the regression including: sex, English learner status (if the student is LEP, ELL, ESL, bilingual, or bilingual/ESL), socioeconomic status, immigrant status, and the grade the student is enrolled in (with 8th grade as the reference category). This means that for Latino students, holding all things constant, TMEP students are more likely to

[5] A grade dummy was included for each grade 'early education' through 12th grade, with 8th grade as the reference category.

be chronically absent than non-TMEP students. The results discussed are statistically significant (P<0.001).

Table 20: Logistic Regression, Chronic Absenteeism by Latino TMEP status

Chronic Absenteeism	2003	2007	2011	2015
Migrant Indicator	1.140***	1.330***	1.673***	1.826***
	(0.0121)	(0.0191)	(0.0244)	(0.0288)
Sex	1.014**	1.020***	1.031***	1.026***
	(0.00506)	(0.00476)	(0.00470)	(0.00452)
English Learner Status	0.919***	0.636***	0.539***	0.485***
	(0.00628)	(0.00401)	(0.00314)	(0.00259)
Socioeconomic Status				
Economically Disadvantaged	1.218***	1.561***	1.913***	2.144***
	(0.00755)	(0.0103)	(0.0137)	(0.0154)
At-Risk of Dropping Out	2.327***	2.408***	2.159***	1.852***
	(0.0149)	(0.0142)	(0.0123)	(0.0105)
Immigration Status				
Immigrant	0.514***	0.587***	0.668***	0.832***
	(0.00710)	(0.00906)	(0.0127)	(0.0151)
Grade[6]				
Constant	0.111***	0.055***	0.043***	0.044***
	(0.00)	(0.001)	(0.004)	(0.000)
N	1827870	2145874	2469930	2716619
pseudo R-sq	0.098	0.108	0.104	0.084

Note. Exponentiated coefficients; Standard Error in parentheses. $^{*}p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$. The sample in this analysis included all Latino TMEP and non-TMEP students enrolled in 'early education' through 12th grade in Texas for years estimated (2003, 2007, 2011, and 2015).

In order to take advantage of the longitudinal nature of the data, the data was set as panel data with student fixed effects for years 2003-2015. A fixed effects Poisson regression was used to estimate total days absent and a conditional fixed-effects logistic regression was used to estimate chronic absenteeism for Latino TMEP students in periods when they were eligible and ineligible for the TMEP.

[6] A grade dummy was included for each grade 'early education' through 12th grade, with 8th grade as the reference category.

The main independent variable the migrant indicator, varied for students whose eligibility for the TMEP switches over time. Therefore, since the fixed effects option fixes effects that do not change over time and measures variables that change over time, the coefficient on this variable was determined only by the experience of students who are switchers. Each student was compared to themselves as they switched in and out of eligibility for the TMEP. To attain the most accurate results while considering limitations due to data size and memory space at the ERC, an analysis was conducted using a 40% random sample of students.

In the analysis, about 64,000 students switched in and out of eligibility for the TMEP. As Tables 21, 22, and 23 illustrate, non-TMEP Latino students missed an average of 20% fewer days of schools annually than Latino TMEP students who were always eligible for the TMEP. Switcher students who were eligible for the TMEP missed an average of 6% fewer days of school as compared to the same students when they were TMEP ineligible. Switcher students, when ineligible for the TMEP missed 20% more school than non-migrant students.

Using panel data with fixed effects, the analysis indicated that there is no significant difference in the probability of missing a day of school between periods when a student was TMEP eligible and when they were not TMEP eligible (Table 24). Exercising a conditional fixed-effects logistic regression, it was estimated that the expected odds of chronic absenteeism for a Latino TMEP student was up to 5% higher during periods when they were eligible for the TMEP, controlling for grade, year, immigration status, and time-invariant variables that have not been measured but that affect the dependent variable. These results were statistically significant ($p<0.01$) (Table 24). By dividing the coefficient by the percentage of students who we know actually participated in the TMEP (75%), we find that when participating in the TMEP, Latino students were 6.7% more likely to be chronically absent than when they were not participating, controlling

for time variant and time-invariant variables. When categorized as a migrant, students are working in the fields and migrating for work with families. Migrant life in itself may impact the rate of chronic absenteeism, and participation in the TMEP may not reduce that rate.

Table 21: Descriptives of Analytic Sample, TEA Data

	Migrant Students			Non-Migrant Students			
	n	M	SD	n	M	SD	t-test
Total Days Absent	720696	8.91	10.72	30006442	7.47	9.26	1.43(0.01)***
Chronic Absenteeism	728951	0.14	0.35	30167843	0.09	0.29	0.05(0.00)***

Note: Sample includes Latino TMEP and non-TMEP students between 2003-2015 in K-12 public schools in Texas.

Table 22: Total days absent by Latino TMEP status, 40% sample

Latino Students	Number of Observations	Number of students	Mean	SD	Min	Max
Migrant students who were always TMEP eligible	84,441	22,236	9.24	11.19	0	153
Migrant students who were ever TMEP eligible	618,358	86,478	9.08	11.12	0	167
Switcher students in periods when they were TMEP eligible	205,224	64,207	8.69	10.44	0	167
Switcher students in periods when they were not TMEP eligible	328,693	64,222	9.28	11.50	0	167
Non-migrant students who were not switchers	11,673,596	1,955,948	7.42	9.18	0	179

Table 23: Chronic Absenteeism by Latino TMEP status, 40% sample

Latino Students	Number of Observations	Number of students	Mean	SD	Min	Max
Migrant students who were always TMEP eligible	85,841	22,236	0.156	0.363	0	1
Migrant students who were ever TMEP eligible	623,092	86,478	0.141	0.348	0	1
Switcher students who were TMEP eligible	207,154	64,207	0.132	0.338	0	1
Switcher students who were not TMEP eligible	330,097	64,222	0.143	0.350	0	1
Non-migrant students who were not switchers	11,737,050	1,955,948	0.093	0.289	0	1

Table 24: Coefficients from Fixed effects Poisson regression of total days absent, and conditional fixed-effects logistic regression of chronic absenteeism.

40% Sample	Total Days Absent	Chronic Absenteeism
Migrant Indicator	0.995	1.047**
	(0.00363)	(0.0155)
Immigrant	0.891***	0.627***
	(0.00282)	(0.0102)
Grade[7]		
Year[8]		
N	11,599,865	3,706,447
pseudo R-sq		0.209

Note. Exponentiated coefficients; Standard Error in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p <$ 0.001. Sample includes all Latino TMEP and non-TMEP students in K-12 in Texas between 2003 and 2016. Due to ERC data size constraints, the sample in this analysis was estimated based on a 40% sample of the total students in the dataset in the same time period.

[7] A grade dummy was included for each grade 'early education' through 12th grade, with 8th grade as the reference category.

[8] A year variable was included for each year, 2003-2015, with 2003 as the reference category.

Graduation Rates

There are many standard ways to calculate graduation rates. TEA data in the sample provided graduation rates that were much lower (up to 30%) than those reported by TEA themselves. Latino students who were in 9th grade in 2003 had graduation rates of about 55% by 2016. TMEP Latino students had much lower rates of about 30%. Graduation rates in TEA data were similar to TEA official reports only for Latino students in 12th grade. Due to these discrepancies and taking into account that migrant students may not graduate from high school in Texas, TEA official rates are used for 2015-2016. Six-year graduation rates are reported for a 9th grade cohort (class of 2014). Graduation rates were calculated Rates include graduating, receiving a GED, or continuing. Rates were calculated as the fraction of all students in 9th grade who we know subsequently graduate, receive a diploma or continue with higher education (TEA, 2017). Table 25 presents graduation rates.

Table 25: Four year, five year extended, and six year extended graduation rates class of 2014, Texas public schools

High School Graduation	2014	2015	2016
Migrant Indicator	88.9%	87.9%	88.6%
Latino/Hispanic Student	91.8%	90.9%	90.8%
Texas Data	93.4%	92.8%	92.8%

Data Source: TEA, 2017.

POSTSECONDARY OUTCOMES

The following results answered the second research question: what postsecondary outcomes did Latino migrant students attain in regards to SAT scores, odds of enrolling in a STEM major,

and level of degree obtained as compared to the Latino non-migrant population. The data in this postsecondary sample is composed of students who attended school in K-12 in Texas, were found in TEA data, and continued on to postsecondary education in Texas. The number of students reported in this data is not an all-encompassing number of students in postsecondary education, but rather students who attended Texas public schools between 2003-2015.

SAT Score

Average annual SAT scores were estimate for Latino TMEP and non-TMEP students for 2005, 2007, 2009, and 2011. SAT scores were used to estimate the college readiness of undergraduate Latino TMEP students contingent on being admitted and attending public universities in Texas. Scores were compared to undergraduate Latino non-TMEP students admitted to public universities in Texas. On average, there was a 74-point difference on a 1600-point scale between Latino TMEP and non-TMEP students. Latino TMEP students scored an average of 890.27 points, while Latino non-TMEP students scored an average of 964.74 points. This was statically significant ($p<0.05$).

For students admitted and attending public universities in Texas, the expected SAT scores for Latino TMEP students were up to 40 points lower than non-TMEP Latino students controlling for factors including socioeconomic status, parent's education level, household income, single parent household, admission to university through the top 10% rule, and English learner status. These results were statistically significant ($p<0.05$). The small difference in scores between Latino TMEP and non-TMEP students maybe due to the selection of Latino TMEP students attending public universities in Texas (only about 11% of the Latino TMEP population in the data who attended K-12 education in Texas attended public university between 2003-2015). Table 26 presents regression results.

Table 26: OLS Regression; Public University Data; SAT score outcomes between undergraduate Latino TMEP and Non-TMEP students

SAT Score	2005	2007	2009	2011
Migrant Indicator	-39.823***	-25.331***	-15.421*	-20.134*
	(7.14)	(6.32)	(7.22)	(8.13)
English Learner	-71.142***	-35.333***	-11.658	-23.445***
	(9.54)	(7.31)	(7.64)	(6.81)
Immigrant	39.586**	4.353	23.059*	15.252
	(13.17)	(10.47)	(9.24)	(9.13)
Sex	-47.486***	-34.798***	-34.556***	-43.575***
	(2.53)	(2.21)	(2.45)	(2.54)
Top 10% Admission	107.232***	98.228***	86.160***	82.897***
	(3.09)	(2.77)	(3.06)	(3.10)
At Risk of Dropping Out	-95.217***	-127.040***	-132.072***	-130.050***
	(2.72)	(2.49)	(2.92)	(2.99)
Economically Disadvantage	-50.201***	-46.640***	-40.398***	-43.469***
	(2.86)	(2.53)	(2.89)	(2.94)
Mother's Education Level				
Father's Education Level[9]				
Single Parent Household	-19.641***	-15.729***	-43.761***	-45.384***
	(3.93)	(3.46)	(9.35)	(5.51)
Family Household Annual Income				
Unknown	-62.070***	-47.491***	-52.952***	-16.621**
	(6.98)	(5.31)	(6.41)	(5.50)
Less than $20K	-59.676***	-39.129***	-35.516***	-31.645***
	(5.89)	(5.22)	(5.63)	(5.53)
Between $20K and $80K	-42.918***	-27.980***	-32.841***	-23.641***
	(4.50)	(4.03)	(4.16)	(4.48)
Greater than $80K	(Reference Category)			
Constant	1132.169***	1126.899***	1146.138***	1177.584***
	(6.48)	(6.44)	(6.99)	(7.49)
R^2	0.337	0.386	0.392	0.396
N	13070	16317	13325	12048

Note Exponentiated coefficients; Standard errors in parentheses * p<0.05, ** p<0.01, *** p<0.001. This sample included Latino migrant student and non-migrant students in Texas for years 2005, 2007, 2009, and 2011. Years represent the year that the student was admitted to public university.

[9] Dummy variables were included for father and mother's level of education (unknown education, no high school, some high school or high school degree, some college or college degree, graduate degree).

Enrollment in STEM Majors

STEM major outcomes indicate that at public Texas universities 31% of undergraduate Latino TMEP students and 26% of undergraduate Latino non-TMEP students majored in STEM fields. The difference was statistically significant ($p<0.001$). The following analysis estimated the odds of majoring in STEM fields for the Latino TMEP and non-TMEP undergraduate population.

Analyses on the odds of enrolling in a STEM major for undergraduate Latino TMEP and non-TMEP students were conducted in 2008, 2011, 2013, and 2015. Although longitudinal data was available, individual year analysis, equally spaced, was estimated so as to simplify interpretation. Analyses were conducted starting in 2008 so that a greater sample of students in the data could enter postsecondary education after high school. The study separated students into undergraduate and graduate student categories. The student classification variable identified students who were freshman, sophomore, juniors, and seniors in college and they were captured in the undergraduate category.

The analyses estimated that for students who graduated from K-12 in Texas and were admitted to public university in Texas, the expected odds of majoring in a STEM field for undergraduate Latino TMEP students is up to 50% higher than for non-TMEP Latino undergraduate students at a public university. The analyses controlled for variables including socioeconomic status, English language status, sex, chronic absenteeism in K-12, standardized test scores, and parent's level of education. These results were statistically significant ($p<0.01$). While this result is surprising, only 11% (24,700 individuals) of Latino TMEP students who were in K-12 in Texas between 2003-2016 attend public universities (about 25% of Latino TMEP students who were in K-12 in Texas attend university, career/technical school, or community college). The students who are in this sample consist of high achieving individuals. Standardized test scores indicate that Latino

TMEP students score only about 3% lower on the ACT than non-TMEP Latino students (36 point scale), and attain SAT scores only about 5% lower than non-TMEP Latino students (1600 point scale). These small differences suggest that the Latino TMEP population enrolled at public universities in Texas is a group of high-achieving individuals. Furthermore, estimation outcomes also indicate that immigrant students in the analysis also had up to 49% higher odds of majoring in a STEM field as compared to non-immigrant students. Studies (i.e. Suarez-Orozco, Suarez-Orozco, Todorova, 2010) indicate that the children of immigrants (1.5 and 2nd generation) often excel in school and have higher outcomes than their American counterparts. Latino migrant students are either themselves immigrants, or the children of immigrants. A study by Nores (2010) also indicated that foreign born individuals had a higher propensity to major in STEM. It is not surprising that Latino TMEP students who attend four-year universities are high achievers who major in STEM fields. Many STEM fields offer greater opportunities for job placement following graduation. Table 27 presents the full results.

Table 27: Logistic regression results; Undergraduate STEM outcomes by Latino migrant status, Public University Students

STEM Major	2008	2011	2013	2015
Migrant Indicator	0.994	1.006	1.505**	1.500**
	(0.0862)	(0.114)	(0.213)	(0.207)
English Learner Status				
English Learner	1.068	1.209	1.116	1.037
	(0.131)	(0.132)	(0.157)	(0.110)
Socioeconomic Status				
Economically Disadv.	0.960	1.083	1.009	1.078
	(0.0390)	(0.0498)	(0.0608)	(0.0634)
At Risk of Dropping Out	0.689***	0.733***	0.696***	0.743***
	(0.0326)	(0.0371)	(0.0486)	(0.0521)
Immigration Status				
Immigrant	1.422*	1.258	1.499*	1.148
	(0.229)	(0.184)	(0.255)	(0.167)
Sex				
Female	0.985	1.027	0.880*	0.914
	(0.0357)	(0.0421)	(0.0458)	(0.0458)
Absenteeism				
Chronically Absent	0.960	0.915	0.855	0.881
	(0.0560)	(0.0560)	(0.0699)	(0.0666)
Standardized Test Scores				
ACT Score	1.022***	1.016***	1.021***	1.017***
	(0.00184)	(0.00203)	(0.00229)	(0.00216)
SAT Score	1.000***	1.000***	1.000***	1.000***
	(0.0000408)	(0.0000473)	(0.0000606)	(0.0000549)
Mother's Education Level				
Father's Education Level[10]				
Single Parent Household	1.071	2.143***	2.606***	2.145***
	(0.477)	(0.219)	(0.224)	(0.182)
N	13547	11022	7150	7553
pseudo R-sq	0.020	0.021	0.034	0.023

Note Exponentiated coefficients; Standard errors in parentheses * p<0.05, ** p<0.01, *** p<0.001. The sample in these analyses includes the undergraduate Latino migrant and non-migrant population who attended public university in Texas and majored in STEM fields for years 2008, 2011, 2013, and 2015.

[10] Father and mother's level of education were included in the regression analyses.

Degree Level Awarded: Community College

Summary statistics for community college data indicate that about 885,393 individual Latino students attended community college between 2013 and 2016. Out of these students, about 5% (45,995) were TMEP eligible students. During this time period, about 13% of Latino non-TMEP students and 16% of Latino TMEP students who attended community college earned degrees. In the sample, about 42% of students earned associate's degrees, 42% of students completed curriculum for transfer, and 24% of students finished certificates.

An ordered logit with the odds ratio option was used to estimate the difference in the odds of attaining a level of degree for Latino TMEP and non-TMEP students attending community colleges.[11] Estimations were conducted for years 2004, 2008, 2012, and 2016 in order to simplify explanation. An ologit regression with the dependent variable *degree level awarded* and the main independent variable *TMEP eligibility* was estimated for each year, and included other control variables. The three levels of award were curriculum completer, certificate, and associate's/bachelor's degree.

For students who attended K-12 education in Texas, graduated, and continued on to community college, the expected odds of attaining a degree a level of degree as compared to all other levels from a community college was up to 62% higher for Latino TMEP students as compared to non-TMEP Latino students, controlling for socioeconomic status, sex, immigration status, English learner status, and STEM major. Latino TMEP students may aim for degrees at institutions that are comparatively less expensive, take less time to complete, and are located closer to home such as community colleges. Degrees at community college Results were statistically

[11] "One of the assumptions underlying ordered logistic regression is that the relationship between each pair of outcome groups is the same. In other words, ordered logistic regression assumes that the coefficients that describe the relationship between, the lowest versus all higher categories of the response variable are the same as those that describe the relationship between the next lowest category and all higher categories, etc. This is called the proportional odds assumption" (UCLA, 2017b).

significant (p<0.05). Table 28 presents the results.

Table 28: Ordered Logit, Degree level Awarded at Community College

Degree Level Awarded	2004	2008	2012	2016
Migrant Indicator	1.621*	1.111	1.092*	1.208***
	(0.351)	(0.0647)	(0.0375)	(0.0321)
English Learner Status				
English Learner	1.669*	1.157*	0.823***	0.665***
	(0.394)	(0.0665)	(0.0270)	(0.0134)
Immigration Status				
Immigrant	0.485	1.532***	1.368***	1.324***
	(0.355)	(0.134)	(0.0697)	(0.0502)
Sex	0.555***	1.051	1.090***	1.048***
	(0.0648)	(0.0275)	(0.0172)	(0.0126)
STEM Major	2.285***	1.614***	1.571***	1.200***
	(0.276)	(0.0448)	(0.0253)	(0.0151)
Socioeconomic Status				
At Risk of Dropping Out	0.948	0.830***	0.805***	0.967*
	(0.120)	(0.0227)	(0.0133)	(0.0125)
Economically Disadvantaged	1.363*	1.093**	1.045**	1.078***
	(0.181)	(0.0302)	(0.0178)	(0.0145)
N	67272	172988	269002	246652
pseudo R-sq	0.022	0.006	0.006	0.003

Note Exponentiated coefficients; Standard errors in parentheses* p<0.05, ** p<0.01, *** p<0.001. This sample includes Latino migrant and non-migrant students who were admitted to community colleges in Texas. Years 2004, 2008, 2012, and 2016 represent the year that degrees were awarded. The level of degrees for community college include curriculum completer, certificate, and associates degree.

Degree Level Awarded: Career and Technical School

Summary statistics for students in career and technical schools indicate that 114,788 individual Latino students attended career and technical schools in Texas between 2003-2016. Latino TMEP students accounted for about 5% of the total student population in the sample. About 5,100 students were awarded degrees during this time. Seventy-six percent of Latino TMEP students and 64% of non-TMEP Latino students who were awarded degrees received a certificate, 18% of Latino TMEP students and 25% of Latino non-TMEP students received an associates

degree. About 3% of Latino TMEP students and 5% of non-TMEP Latino students were awarded bachelor's degrees. Less than 1% of Latino TMEP and non-TMEP students received graduate degrees[12].

Estimations were conducted for years 2004, 2008, 2012, and 2016. For students who attended K-12 education in Texas, graduated, and continued on to career/technical school, the expected odds of attaining a degree from a career/technical school was up to 21% lower for Latino TMEP students as compared to non-TMEP Latino students, controlling for socioeconomic status, sex, immigration status, English learner status, and STEM major. Results were statistically significant ($p<0.05$). Table 29 provides full results.

[12] Bachelors and graduate degrees were mostly awarded by private out of state institutions accredited to provide services in Texas and included in the career and technical school data.

Table 29: Ordered Logit, Degree Level Awarded in Career/Technical School

Degree Level Awarded	2004	2008	2012	2016
Migrant Indicator	0.612	0.797***	0.822**	0.993
	(0.238)	(0.0490)	(0.0553)	(0.0573)
English Learner	0.907	1.197***	1.129**	0.829***
	(0.180)	(0.0612)	(0.0441)	(0.0280)
Immigrant	1.828	1.299	1.185*	1.147
	(1.158)	(0.183)	(0.0993)	(0.102)
Sex	0.857	0.720***	0.875***	0.567***
	(0.0914)	(0.0270)	(0.0251)	(0.0192)
STEM Major	3.477***	3.114***	2.634***	29.80***
	(0.992)	(0.0856)	(0.0549)	(1.266)
Socioeconomic Status				
At-Risk of Dropping Out	0.839	0.750***	0.730***	0.909**
	(0.0980)	(0.0305)	(0.0223)	(0.0292)
Economically Disadvantaged	1.144	0.848***	0.854***	0.763***
	(0.127)	(0.0334)	(0.0263)	(0.0279)
N	1352	13875	20269	24048
pseudo R-sq	0.007	0.032	0.021	0.239

Note Exponentiated coefficients; Standard errors in parentheses * p<0.05, ** p<0.01, *** p<0.001. This sample includes Latino migrant and non-migrant students who were admitted to career/technical schools in Texas. Years 2004, 2008, 2012, and 2016 represent the year that degrees were awarded. The level of degrees for career/technical schools includes certificate, associates, bachelors, and graduate degree.

Degree Level Awarded: University

Summary statistics indicate that between 2003 and 2016, 460,188 individual Latino students attended university. Latino TMEP students made up about 5% of the total Latino student population attending public university (about 24,700 students). About 28% of Latino TMEP students and about 47% of Latino non-TMEP students who attended public university were awarded degrees. About 86% of Latino TMEP and non-TMEP students who received degrees were awarded bachelor's degrees and about 14% of Latino TMEP and non-TMEP students who received degrees were awarded graduate degrees. Estimations were conducted for 2004, 2008, 2012, and 2015. For students who attended K-12 education in Texas, graduated, and continued on to university, the

expected odds of attaining a degree from a university was up to 21% lower for Latino TMEP students as compared to non-TMEP Latino students, controlling for socioeconomic status, sex, immigration status, English learner status, and STEM major, admission through top 10%, and parent's education. Results were statistically significant ($p<0.05$). Table 30 presents regression outcomes.

Table 30: Ordered Logit, Degree Level Awarded at University

Degree Level Awarded	2004	2008	2012	2015
Migrant Indicator	0.804**	0.820***	0.797***	1.058
	(0.0680)	(0.0436)	(0.0360)	(0.0682)
English Learner Status	0.764	1.125	0.921	0.459***
	(0.109)	(0.0743)	(0.0441)	(0.0313)
Immigrant	1.601*	1.430***	1.309***	1.160
	(0.296)	(0.142)	(0.0883)	(0.109)
Sex	1.342***	1.442***	1.496***	1.527***
	(0.0419)	(0.0331)	(0.0286)	(0.0435)
STEM Major	1.861***	2.463***	2.413***	1.606***
	(0.0679)	(0.0667)	(0.0513)	(0.0475)
Top 10% Admission	2.233***	1.656***	1.269***	0.0697***
	(0.0910)	(0.0539)	(0.0318)	(0.00793)
At-Risk of Dropping Out	0.556***	0.527***	0.629***	0.738***
	(0.0207)	(0.0145)	(0.0146)	(0.0244)
Economically Disadv.	0.768***	0.685***	0.628***	0.723***
	(0.0261)	(0.0176)	(0.0135)	(0.0226)
Mother' Education				
Unknown	0.903	0.778*	0.865*	1.185
	(0.118)	(0.0892)	(0.0579)	(0.109)
No High School	0.978	1.046	0.973	1.046
	(0.102)	(0.0859)	(0.0586)	(0.0900)
High School	0.776**	0.862*	0.899*	0.849*
	(0.0674)	(0.0594)	(0.0479)	(0.0635)
College/Degree	0.915	0.984	0.985	0.826**
	(0.0742)	(0.0635)	(0.0497)	(0.0576)
Graduate	(Reference Category)			
Father's Education[13]				
N	17236	32666	51902	63985
pseudo R-sq	0.062	0.074	0.062	0.050

Note Exponentiated coefficients; Standard errors in parentheses * p<0.05, ** p<0.01, *** p<0.001. This sample includes Latino migrant and non-migrant students who were admitted to public universities in Texas. Years 2004, 2008, 2012, and 2016 represent the year that degrees were awarded. The level of degrees for university includes associates, bachelors, and graduate degree.

[13] Father's level of education was also included in the regression analyses. Dummy variables included unknown education, no high school, some high school or high school degree, some college or college degree, graduate degree.

LABOR MARKET OUTCOMES

The third research question examined the labor market outcomes for Latino migrant students as compared to Latino non-migrant students. Outcomes measured included the odds of working agricultural labor, and annual wages. The following results were found:

Wages (TEA-TWC)

On average, not accounting for graduation, workers in the K-12 dataset who continued on to the labor market (not accounting for high school graduation or attending postsecondary education) earned an annual income of about $ 14,500. Former migrant students earned about $ 14,100. Wages following school completion or graduation increased annually. Summary statistics indicated that on average, following high school graduation, Latino workers earned about $18,000 annually. Former Latino migrant students earned about $17,200.

An OLS regression on the log of annual wages was conducted for 2004, 2008, 2012, and 2016. The expected log wage for Latino TMEP students who attended K-12 in Texas and continued into the Texas workforce was up to 11% lower than for non-TMEP Latino students in the same data, controlling for age and age-squared, socioeconomic status, chronic absenteeism in K-12, English learner status, sex, immigration status in K-12, and NAICS sector. Mining, oil, gas, and water were used as the reference category for the NAICS sector. Age as well as the number of years post graduation increased wages. Results were statistically significant ($p<0.001$) and are presented in Table 31. Sectors, although included in the regression, are not included in the table.

Table 31: OLS Regression, TEA TWC, Log of annual wages on Latino TMEP outcomes

Log of Wage	2004	2008	2012	2016
Migrant Indicator	-0.114***	-0.092***	-0.057***	-0.093***
	(0.01)	(0.01)	(0.01)	(0.01)
Age	-1.111***	0.842***	0.761***	0.396***
	(0.06)	(0.01)	(0.01)	(0.01)
Age^2	0.041***	-0.019***	-0.018***	-0.009***
	(0.00)	(0.00)	(0.00)	(0.00)
Number of Years Post Graduation	0.057***	0.153***	0.265***	0.175***
	(0.00)	(0.00)	(0.00)	(0.00)
Chronic Absenteeism	-0.013	-0.042***	-0.071***	-0.145***
	(0.01)	(0.00)	(0.00)	(0.00)
At Risk of Dropping Out	0.020***	0.023***	-0.040***	-0.114***
	(0.01)	(0.00)	(0.00)	(0.00)
Economically Disadvantaged	0.015*	0.049***	0.028***	-0.008**
	(0.01)	(0.00)	(0.00)	(0.00)
English Language Learner	0.081***	0.020**	0.031***	0.008
	(0.01)	(0.01)	(0.00)	(0.00)
Sex	-0.123***	-0.178***	-0.221***	-0.229***
	(0.01)	(0.00)	(0.00)	(0.00)
Immigrant	0.257***	0.165***	0.107***	0.086***
	(0.03)	(0.01)	(0.01)	(0.01)
Sectors[14]				
Constant	14.176***	-0.935***	-0.298***	4.406***
	(0.55)	(0.13)	(0.07)	(0.07)
R^2	0.177	0.344	0.376	0.224
N	179152	447597	713052	830047

Note Exponentiated coefficients; Standard errors in parentheses; * p<0.05, ** p<0.01, *** p<0.001. The sample includes Latino students who were found in K-12 data and continued on to the workforce. Inclusion in the sample is not contingent on graduation from high school. Years 2004, 2008, 2012, and 2016 represent the wages earned in that year.

Employment (TEA-TWC)

On average, former migrant students who went from K-12 data into the workforce (not account for graduation or postsecondary enrollment) spent 2.28 years in the agriculture industry, not accounting for other factors. Non-former migrant students (all races/ethnicities) meanwhile

[14] All NAICS Sectors included in the analyses with Mining, Oil, Gas, & Water as the Reference Category.

spent an average of 2.02 years working in agriculture. About 1% of Latino non-TMEP students and 5% of Latino former TMEP students from the sample worked in the agriculture sector.

A logistic regression was conducted in 2004, 2008, 2012, and 2016. The expected odds of working in the agriculture sector for Latino TMEP students was up to 7.72 times higher than for non-TMEP Latino students, controlling for whether the student graduated from high school, chronic absenteeism in K-12, socioeconomic status, English Learner status, sex, and immigrant status. These are students who were originally in K-12 TEA data and continued into the workforce in Texas. Despite schooling and services received through the TMEP, Latino TMEP students were still more likely to return to agriculture work versus working in all other sectors. Results were statistically significant ($p<0.01$) and presented in Table 32.

Table 32. Logistic regression, employment in the agriculture sector as recorded by TEA/TWC data

Agriculture Sector	2004	2008	2012	2016
Migrant Indicator	7.726***	6.300***	5.895***	5.593***
	-0.258	-0.179	-0.148	-0.135
Graduation Status				
Graduated	0.728***	0.633***	0.506***	0.614***
	-0.0249	-0.0189	-0.0135	-0.0139
Absenteeism				
Chronically Absent	0.851***	0.873***	0.903***	1.056*
	-0.0282	-0.0251	-0.0231	-0.0235
Socioeconomic Status				
At Risk	0.951	1.009	1.084**	1.294***
	-0.0349	-0.0333	-0.0318	-0.0348
Economically Disadv.	2.055***	1.873***	1.762***	1.515***
	-0.0856	-0.0704	-0.0606	-0.0489
English Learner Status				
English Learner	1.406***	1.546***	1.485***	1.196***
	-0.0554	-0.05	-0.0414	-0.0308
Sex	0.348***	0.337***	0.332***	0.291***
	-0.012	-0.0102	-0.00894	-0.00748
Immigration Status				
Immigrant	0.933	1.053	1.177**	1.281***
	-0.0905	-0.0764	-0.0691	-0.0713
N	258677	644643	982500	1476082
pseudo R-sq	0.111	0.094	0.094	0.08

Note Exponentiated coefficients; Standard errors in parentheses; * p<0.05, ** p<0.01, *** p<0.001. The sample includes students who attended K-12 education then went into the workforce. Years 2004, 2008, 2012, and 2016 represent the odds of working in agriculture sector in that year.

Wages (THECB-TWC)

On average, Latino workers who were former TMEP students, graduated from high school, attended postsecondary education, and continued on to the Texas workforce made up about 5% of the total workforce in Texas. They also earned about 10% less than Latino workers, who were not TMEP students, had graduated from high school, attended postsecondary education, and worked in Texas. Following graduation for postsecondary institution, Latinos who were former TMEP

students earned an average of about $24,000 as compared to Latinos who were not former TMEP students and earned an average of about $26,000 annually.

For the regression analysis on wage, log wages were calculated annually. OLS regressions were run yearly for 2008, 2010, 2013, and 2016 representing evenly spread out years in the data in order to ease interpretation. Analyses were started in 2008 in order to allow the first cohort to graduate from high school in 2003, and have enough time to finish college. The expected log wage for Latino TMEP students who attended K-12 in Texas, continued to postsecondary education in Texas, and then into the Texas workforce was up to 12% lower than for non-TMEP Latino students in the same data depending on the year, and controlling for age and age-squared, socioeconomic status, chronic absenteeism in K-12, English learner status, sex, and immigration status in K-12, NAICS sector, and degree level awarded in postsecondary education. In regards to other variables in the analyses, as anticipated, Latino workers who were awarded an associates degree or certificate at university, career/technical school, or community college earned lower wages than Latino workers who earned a bachelor's degree. Counter intuitively, the analyses outcomes also indicate that students who graduated from postsecondary education earn less. The inclusion of dummy variables for certificate, bachelor, associate, and graduate degrees, which also suggest graduation from postsecondary education, can influence the negative outcome seen with the graduation variable. Similarly, the expected wages for a Latino non-migrant laborer in a STEM major indicate up to 5% lower earnings than a Latino non-migrant laborer who did not major in STEM, controlling for other factors. The reason for this may be that workers in the dataset may not have enough time to buildup wages (early career) or may not have graduated with a degree. For the first cohort of students in K-12 who graduated high school in 2003, and attended university for four years, 2008

would be the first year when they were in the workforce. Data with later years might provide different results. Table 33 presents full outcomes. Results were statistically significant ($p<0.01$).

Table 33: OLS Regression; THECB-TWC, Log of annual wages on Latino TMEP outcomes

Log of Annual Wage	2008	2010	2013	2016
Migrant Indicator	-0.116***	-0.122***	-0.096***	-0.100***
	(0.01)	(0.01)	(0.01)	(0.01)
Age	0.366***	0.373***	0.365***	0.280***
	(0.01)	(0.01)	(0.02)	(0.01)
Age2	-0.004***	-0.004***	-0.005***	-0.004***
	(0.00)	(0.00)	(0.00)	(0.00)
Graduated	-0.038***	-0.053***	-0.077***	0.062***
	(0.00)	(0.00)	(0.00)	(0.00)
English Learner	-0.032***	-0.024**	-0.032***	-0.024***
	(0.01)	(0.01)	(0.01)	(0.00)
Economically Disadvantaged	0.057***	0.061***	0.048***	0.037***
	(0.00)	(0.00)	(0.00)	(0.00)
At Risk of Dropping Out	-0.039***	-0.069***	-0.083***	-0.088***
	(0.00)	(0.00)	(0.00)	(0.00)
Chronically Absent	-0.189***	-0.173***	-0.157***	-0.158***
	(0.00)	(0.00)	(0.00)	(0.00)
Immigrant	0.111***	0.108***	0.057***	0.040***
	(0.02)	(0.01)	(0.01)	(0.01)
STEM Major	-0.049***	-0.042***	-0.054***	-0.046***
	(0.00)	(0.00)	(0.00)	(0.00)
Certificate	-0.282***	-0.376***	-0.375***	-0.367***
	(0.05)	(0.02)	(0.01)	(0.01)
Associate's Degree	-0.139**	-0.200***	-0.249***	-0.277***
	(0.05)	(0.02)	(0.01)	(0.01)
Bachelor's Degree	(Reference Category)			
Graduate Degree	-0.054	0.052	0.010	-0.000
	(0.12)	(0.04)	(0.01)	(0.01)
Any Degree	0.734***	0.693***	0.623***	0.529***
	(0.04)	(0.01)	(0.01)	(0.01)
Sectors[15]				
Constant	4.141***	3.972***	4.546***	5.760***
	(0.13)	(0.15)	(0.18)	(0.16)
R^2	0.246	0.260	0.308	0.264
N	391756.000	465341.000	679421.000	792877.000

Note Exponentiated coefficients; Standard errors in parentheses; * p<0.05, ** p<0.01, *** p<0.001. The sample includes students from K-12 data who graduated from high school and continued on to postsecondary education. Years 2008, 2010, 2013, and 2016 represent the wages of students during that year.

[15] All NAICS Sectors included in the analyses with Mining, Oil, Gas, & Water as the Reference Category.

Employment (THECB-TWC)

On average, for students who attended postsecondary education in Texas, Latinos who were former TMEP students spent 2.18 years in the agriculture sector, and non-former TMEP students spent 2.15 years, not accounting for other factors. About 3% of former TMEP Latino students and less than 1% of former non-TMEP Latino students were employed in the agriculture sector between 2003-2016.

For years 2008, 2010, 2013, and 2016 the expected odds of working in the agriculture sector as compared to all other sectors for Latino TMEP students who attended postsecondary education and went into the workforce were up to 7.72 times higher than for non-TMEP Latino students who attended postsecondary education, controlling for whether the student graduated from postsecondary education and attained a degree, as well as K-12 outcomes such as chronic absenteeism, socioeconomic status, English Learner status, sex, and immigrant status. These are students who were originally in K-12 TEA data, were admitted and attended postsecondary education in Texas, were in THECB data, and continued into the workforce in Texas. Despite attending postsecondary education, Latino TMEP students were still more likely to work in agriculture following postsecondary attendance. Earning any postsecondary degree did reduce the odds of a Latino TMEP student working in agriculture, although with a statistical significance for only one year. Results are presented in Table 34 and are statistically significant ($p<0.01$).

Table 34: Logistic regression, employment in the agriculture sector as recorded by THECB/TWC data

Agriculture Sector	2008	2010	2013	2016
Migrant Indicator	7.487***	6.402***	6.309***	5.342***
	-0.355	-0.297	-0.275	-0.258
Graduation Status				
Graduated	1.055	1.001	0.994	1.032
Age	0.826***	0.878***	0.923***	0.965***
	-0.00826	-0.00758	-0.00592	-0.00615
Absenteeism				
Chronically Absent	0.793***	0.932	1.015	1.078
	-0.0377	-0.0415	-0.0417	-0.0473
Socioeconomic Status				
At Risk	1.048	1.107*	1.178***	1.128**
	-0.0484	-0.0491	-0.049	-0.0502
Economically Disadv.	1.500***	1.678***	1.444***	1.287***
	-0.0811	-0.0913	-0.0723	-0.066
English Learner Status				
English Learner	1.500***	1.367***	1.259***	1.063
	-0.0986	-0.0871	-0.072	-0.0674
Sex				
Female	0.325***	0.316***	0.328***	0.312***
	-0.0151	-0.0142	-0.0138	-0.014
Immigration Status				
Immigrant	1.045	1.048	1.201	1.061
	-0.137	-0.133	-0.129	-0.136
Postsecondary Degree	0.694	1.116	0.893	0.841*
	-0.213	-0.142	-0.0823	-0.064
N	391962	465527	679605	793111
pseudo R-sq	0.102	0.086	0.074	0.056

Note Exponentiated coefficients; Standard errors in parentheses; * p<0.05, ** p<0.01, *** p<0.001. The sample includes students from K-12 data who graduated from high school and continued on to postsecondary education. Years 2008, 2010, 2013, and 2016 represent the odds of working in the agriculture sector as compared to all other sectors for that year.

Chapter 5: Summary, Discussion, and Implications

Chapter 5 presents a summary of the study, including a brief section outlining the methodology used, findings, discussion, and implications for policy, theory, and further research. The chapter closes with a concluding statement.

SUMMARY OF THE STUDY

Experiences of the migrant student population in the US are unlike that of almost any other student group. Migrant students face unparalleled difficulty to attend and complete secondary education, and undertake an even greater struggle to finish postsecondary education, graduate with a degree, and work in non-traditional migrant occupations. The constant mobility of migrant students in pursuit of employment results in interruption in school attendance, inability to finish course work, and lack of motivation or opportunity to successfully pass assessment exams and complete course work for graduation. Migrant students also face high rates of poverty that result in poorer health outcomes, inadequate nutrition, and often lack educational resources such as access to the Internet, tutoring, or school supplies. According to TEA data, about 30% of Latino migrant students eligible for the TMEP are English learners and eligible for some form of bilingual education. Higher rates of English learners may be found in other states. Regardless, many migrant parents are non-native English speakers or speak very little English. On average, only 31% of farmworkers reported speaking English well, and on average had finished an 8th grade level of education (although more than 30% of workers had lower than a 6th grade education) (Hernandez, Gabbard, & Carroll, 2016). Due to the level of education and long hours at work, migrant farmworker parents are often unable to help their children with homework. Furthermore, many migrant children work alongside parents in the fields for up to 12 hours a day. The only restrictions

in farm work that exist prevent farmworker children from working during school hours (Hess, 2007). Farm labor in itself has many serious consequences ranging from exposure to pesticides, to long hours in extreme heat, and hard labor (Hess, 2007). These difficult conditions leave little energy for schoolwork.

The MEP was created in the 1960s with the objective of creating equal opportunities for K-12 graduation and successful continuation into postsecondary education and the workforce. The program offers services including mentoring and standardized test preparation, as well as referrals to social service. Since the program was established in the 1960s, very few studies have evaluated the program itself, or migrant student long-term outcomes including whether the MEP has successfully met its goals. While evaluating program services is an opportunity for future studies, few analyses have considered migrant experiences in postsecondary education, graduation rates, and no studies have specifically looked at outcomes of former migrant students in the workforce. The aim of this dissertation was to compare outcomes of Latino migrant students eligible and participating in the TMEP and compare them to Latino migrant students when they are ineligible for the TMEP as well as to non-migrant Latino students. Furthermore, without making causal claims, this study strove to determine whether eligibility or participation in the TMEP decreased the disadvantage faced by Latino migrant students as compared to Latino non-migrant students.

SUMMARY OF THE METHODOLOGY

Studies in this dissertation were separated into three parts – K-12, postsecondary, and labor outcomes. Statistical analyses including OLS regression, logistic regression, ordered logistic regression, zero inflated Poisson regression, and panel data with fixed effects were conducted in order to estimate migrant student outcomes. Analyses were conducted for students in K-12, and then students were followed into postsecondary education and the workforce over a 14-year period.

Research questions focused on absenteeism and chronic absenteeism rates as well as graduation rates in K-12 education, SAT scores, level of degree awarded, and STEM major choice, in postsecondary outcomes. In the labor and wage data, odds of working in the agricultural sectors as well as the log wages of Latino laborers with and without college degrees were recorded. While there are few studies that have focused on postsecondary and labor outcomes, many scholars have compared K-12 outcomes for migrant and non-migrant students. However, Latino migrant student absenteeism and chronic absenteeism have not been considered. School absenteeism rates are important indicators of migrant student graduation rates and long-term success. Characteristics of the migrant student experience can affect these indicators. Little information was available on college readiness for the Latino migrant student population in Texas which serves as a proxy for college readiness. Once in postsecondary education, electing to complete a STEM major can result in a variety of opportunities in the workforce. No studies had been conducted on migrant student STEM major enrollment. Furthermore, while programs around the country including the federal program CAMP exist to assist migrant students in pursuing postsecondary education, minimal information was available on Latino migrant student graduation rates and levels of degree awarded. The analyses in this dissertation strove to fill the knowledge gap on these fundamental understandings of the Latino migrant student experience and compare outcomes to Latino non-migrant students. Once in the labor force it was important to understand whether Latino migrant students left the agricultural cycle, and if not, how long they remained. Furthermore, the estimations strove to determine whether migrant status bore impact on labor wages.

SUMMARY OF FINDINGS

K-12 Outcomes

Findings indicate that when compared to the Latino non-TMEP student population, Latino TMEP students have a higher incidence rate of absenteeism and are more likely to be chronically absent, controlling for grade, bilingual/ESL/LEP status, immigration status, sex, economic disadvantage, and being classified at-risk of dropping out of school. The high opportunity cost of school influences absenteeism rates for the TMEP population. Changes in federal funding in 2003 may have cut the services available to MEP and TMEP students. Findings of past studies (i.e. Gibson & Hidalgo, 2009) indicate the importance of teachers and mentors who understand the experiences of migrant families. Mentors can provide resources that help students overcome the challenges they face. With budget cuts, schools may be able to retain mentors for migrant families, particularly in schools with small migrant populations. Although the impact of specific services has not been thoroughly investigated, such budgetary changes could be related to absenteeism rates.

It is possible to estimate whether the Texas Migrant Education Program is able to compensate for disadvantages faced by migrant students through an Intent-to-Treat (ITT) estimate. This estimate is calculated by taking the regression coefficient estimation and dividing it by the percentage of participants who did participate in the study (i.e. Lang, 2015). While uncertainty remains about exactly how many migrant students eligible for the TMEP did not participate in the program, a reasonable appraisal is about 25% (U.S. Department of Education, 2016). ITT is estimated, and thereby program effects, by taking the coefficient of 5% (the increase in the odds of chronic absenteeism for Latino TMEP students), and dividing it by the number of participants who we know received treatment (75%). The ITT of the TMEP is calculated to be 6.7%; meaning that Latino migrant students when participating in the TMEP, have 6.7% higher odds of being

chronically absent as compared Latino migrant students when they are ineligible to participate in the TMEP controlling for time invariant outcomes. As mentioned in the findings, the migrant student life is defined by frequent migration as students follow seasonal harvests, work along side families, or help families at home. When students are considered eligible for the TMEP, they are by definition moving. Participation in the program is not able to lower odds of chronic absenteeism to the level of when students are ineligible for TMEP participation.

Understanding chronic absenteeism and how it impacts migrant students can help policymakers, scholars, and practitioners recognize the ways in which disadvantages faced by migrant students could be corrected. Migrant students deserve the attention of policymakers because this population is often overlooked in research on chronic absenteeism. High rates of chronic absenteeism are one challenge that migrant students face and addressing this may improve graduation rates and postsecondary outcomes.

Graduation rates as reported by TEA (2017) for the class of 2014 indicated that Migrant students in Texas graduated at a rate of 88.9% in 2014. Comparatively, Latino students graduated at a 91.8% rate in 2014, while all students in Texas graduated at a rate of 93.4%. These outcomes indicate that with the help of TMEP services, migrant students are finishing at similar rates to other students in Texas. These services are essential to combat the many obstacles to graduation that migrant students face.

Postsecondary Outcomes

Estimates on differences in SAT scores between the Latino TMEP and non-TMEP population found that Latino TMEP students scored about 40 points less than non-TMEP Latino students controlling for other factors in the analysis, and on average between 2003-2015 Latino TMEP students scored about 70 points lower than non-TMEP Latino students. Although these

differences were statistically significant, such a small variance is surprising, and highlights that the Latino TMEP population admitted to universities are high achieving students. SAT and ACT scores signify to colleges the college readiness of students. They are also used to determine university admissions when students in Texas are not in the top 10% of their graduating class. One service that is supposedly readily provided by the TMEP is SAT/ACT tutoring, but it is unknown how many TMEP students have access to these services.

The analysis of postsecondary education trajectories found that between 2003-2016, about 25% of Texas Latino migrant students in K-12 data continued on to community college, career/technical school, or public university or college in Texas and about one-quarter of Latino migrant students received degrees. This is remarkably similar to the persistence rate of Latino non-migrant students in K-12 data, of whom about 26% continued on to postsecondary education in Texas, and from these, 30% graduated with a degree. Other sources report that over 40% of non-migrant students graduated with some type of degree (Texas Aspires, 2018), this percentage includes private universities, which was not incorporated into this study. Only out of states schools that have been certified to provide services in Texas (and are part of the career and technical school data files) are included in the data.

Contingent on attending community college, Latino migrant students had higher odds of obtaining degrees at community colleges than Latino non-migrant students, but lower odds of obtaining degrees at career/technical schools or universities. Compared to Latino non-migrant students, Latino migrant students in community college had up to 62% higher odds of obtaining a level of degree (curriculum, certificate, associates/bachelors), controlling for other factors in the analysis.

Latino migrant students attending public university or career/technical schools had lower

odds of obtaining a degree than Latino non-migrant students. Depending on the year, Latino migrant students had up to 21% lower odds of obtaining a degree at a university or career and technical schools as compared to Latino non-migrant student. The majority of Latino TMEP and non-TMEP students earned bachelor degrees at university. At a career or technical school, the majority of TMEP Latino students and non-TMEP Latino students who earned degrees earned certificates.

There are many reasons why migrant students have higher odds of attending and receiving degrees at community colleges than other postsecondary institutions. First, community colleges are often public and students can benefit from lower tuition rates than at universities or private schools. Community colleges are found even in rural communities across the state and provide access to higher education without paying for the full college experience. Migrant students can obtain a certificate or complete a degree for transfer to another institution at community colleges. While higher degree attainment is beneficial, earning degrees such as certificates at technical colleges can provide migrant student with job opportunities (i.e. dental hygienist or technician) they might not be eligible for with only a high school degree.

In many fields (notably STEM), higher degrees are necessary to be competitive in the modern labor force (Texas Aspires, 2018). Latino migrant undergraduate students who attended public universities in Texas had up to 50% higher odds of majoring in STEM fields as compared to Latino non-migrant students, controlling for socioeconomic factors, SAT/ACT scores, parent's level of education etc. As with SAT score outcomes, the Latino migrant students in the sample who attend public university are a unique group of individuals. As noted in the findings, immigrant students in the analysis also had higher odds of majoring in STEM fields, and 1.5 and 2nd generation immigrant students have higher outcomes than American students overall. Latino

Migrant students are typically 1.5 or 2nd generation immigrant students. Majoring in STEM can provide migrant students with higher paying future job prospects as compared to other fields. Migrant students who invest money in a university education, which is typically more expensive than a community college or career school, are likely doing so with the expectation of being high achieving students.

Services for migrant students in postsecondary education can be instrumental in supporting positive long-term education outcomes. Higher wages and better career opportunities may be accessible with a higher quality of education and higher level of degree award. Within the data, only about 25% of Latino migrant students who attended any postsecondary education graduate with a postsecondary degree as compared to 30% of Latino non-migrant students in the data. For Latino students who attended public university, only about 28% of Latino TMEP students graduated with a degree as compared to 47% of non-TMEP Latino students between 2003-2016. From the Latino TMEP students who earn university degrees, 86% earn bachelor's degrees, and 14% obtain graduate degrees. Even though Latino migrant students seem to have parity with Latino non-migrants as far as the type of degree they earn, increasing the number of Latino migrant students who earn degrees represents an area of potential improvement for the TMEP. Access to postsecondary education could be expanded through services in the TMEP that target postsecondary attendance and completion. Funding for CAMP has been cut in recent years, and TMEP students who benefited from the services these programs provided no longer have access. For many Latino TMEP students, financial problems afford the largest barrier to success in postsecondary education. Many students have to give up studies to help their families or support themselves. Providing scholarships specifically targeting the migrant population can increase secondary and postsecondary completion rates of migrant students.

Furthermore, while current policy concentrates on increasing rates of STEM participation for Latinos, women, and socioeconomically disadvantaged students, no attention has been brought specifically to the migrant student population. While the small percent of Latino TMEP students who attend public universities have higher odds of majoring in STEM than do non-TMEP Latinos, a selection bias exists for this sample of students who are able to attend university. Expanding information to the Latino TMEP population on the opportunities of majoring in STEM fields can target a portion of Latino students who have been left behind. As labor options in STEM fields continue to grow, it is imperative to promote STEM opportunities for migrant students. Introducing after school programs, summer camps, and work site visits could ignite interest in STEM fields for the migrant student population. This untapped population can provide the US with a highly skilled and educated workforce, and help close the knowledge and skill gap that currently exists. Furthermore, expanding the portion of Latino students in STEM fields by targeting TMEP students can decrease the currently existing gap that exists for minority populations.

Labor Force Outcomes

Migrant students face many obstacles in their educational journey, such as financing their education, dealing with cultural barriers to attend schools farther away from home, and resisting temptation of entering the labor market early. Labor market and wage outcomes highlight how migrant students continue to endure greater burdens than non-migrant Latino students; through TMEP services, these may be ameliorated by increasing postsecondary attainment as much as possible, even beyond non-migrant rates.

In every analysis conducted, the annual wages of Latino migrant students were estimated to be lower than non-migrants after controlling for multiple factors (including demographics, socioeconomic status, sector, graduation, and college attendance). The expected difference in

wages for Latino migrant students who completed K-12 and went into the workforce versus wages for non-migrant Latino students who completed K-12 were about 12% lower annually. The difference in wages for Latino migrant versus non-migrant Latino students who went on to postsecondary education before entering the workforce was about 11% annually net of other factors. Furthermore, Latino migrant students had much higher odds of working in the agricultural sector than non-migrant Latino students. Depending on the particular year, for students who attended K-12 education in Texas and continued into the workforce (regardless of postsecondary attendance or graduation) Latino migrant students had up to 7.7 times higher odds of working in the agricultural sector than non-migrant Latino students. Even for Latino migrant students who attended postsecondary education, the odds remained over 7 times higher than for non-migrant Latino students. Wages in agriculture were much lower than for other sectors. Workers in agriculture, even those who attended university, earned up to 77% less than industries such as mining, oil, gas, and water - controlling for other factors. Lower long-term wages and higher odds of working in traditional migrant labor such as agriculture highlight the extra support needed by Latino migrant students in Texas. The TMEP has an opportunity to boost secondary, postsecondary, and labor preparation of Latino migrant students. Exposing students to high achieving mentors, job opportunities, and career training can support the growth and long-term outcomes of Latino migrants in Texas. Creating educational programs and training that will specifically focus on STEM opportunities can be beneficial for both TMEP students and the state of Texas which will be supplied with a skilled workforce. Studies in this dissertation have highlighted the gap that exists between the Latino TMEP and non-TMEP populations. Many opportunities exist to provide further support for TMEP students.

DISCUSSION AND THEORY IMPLICATIONS

Findings from wage outcomes are consistent with Becker's (1964) ideas regarding inequality in education and distribution of earnings. Latino migrant students often receive lower quality education due to frequent relocation and chronic absenteeism. Latino migrant students who participate in the TMEP are also less likely to graduate from high school or continue on to postsecondary education than Latino non-migrant students. Consequences of discrepancies between Latino TMEP and non-TMEP students are evidenced by lower wages earned by former migrant students and higher odds of working in the agricultural sector. High school and college graduation can be signaling and screening tools for employers. Increasing rates of postsecondary attendance, completion, as well STEM majors may impact long-term labor force opportunities and wages for Latino migrants. THECB data indicated that Latino migrant students are more likely to attend UT Brownsville, while non-migrant students (all races) are more likely to attend UT Austin. The reputation of the institution in itself may signal to employers varying levels of skill and quality of education. It may be that migrant students are seen as not being prepared well enough to attain higher quality jobs, forcing them back into familiar agriculture work.

There are many factors that may influence long-term wage outcomes and sector of employment, including social capital and family obligations, which were not measured in these studies. Differences in the types of social capital acquired over time by migrants and non-migrants can result in variance in the networks and opportunities students are able to access. Specifically, these discrepancies can manifest in employment prospects. Latino migrant students may have easier access to agricultural work than other labor, which may disincentivize pursuit of other careers. Between 2003 and 2016, the odds of migrant students working in the agricultural sector decreased from 8 times higher to 5 times higher than non-migrant Latino students. The mechanization of

agriculture may be one explanation, but a more optimistic possibility is that migrant students had increasing access to better opportunities.

While HCT asserts that the capital acquired by way of education can be a profitable investment for both society and the individual and result in better long-term labor outcomes (Psacharopoulos, 1973, 1981), it typically fails to account for factors such as student mobility and financial barriers to education. This study validates HCT by demonstrating that the addition of human capital by way of primary, secondary, and postsecondary education improves wages and lowers migrant students' rate of return to agricultural labor. However, education in itself does not counterbalance the disadvantages migrant students endure. The TMEP can provide much needed services to Texas migrant students, but only if there is sufficient funding to do so. In 2014, about $1,600 was spent per TMEP eligible student in Texas. While this money can begin to provide some services for migrant students, it is not nearly enough to meet the needs of this highly mobile, high poverty, and English language learner population. Currently, the TMEP does not have the means to bridge the human capital gap that systemic inequity and income inequality create. Migrant students are a vulnerable group of U.S. citizens that continue to encounter considerable barriers to educational and economic success. While resiliency and determination among migrant student can help many find ways out of the cycle of poverty, structural dynamics make this the exception rather than the norm. Further investigation into the causes of long-term disadvantages faced by the migrant population is essential to finding systemic solutions. This study is one of the first to consider postsecondary and labor market outcomes for Latino students eligible for, or participating in, the TMEP. Results suggest that the current state and federal programs for migrant students can be enhanced to provide much needed support. Higher rates of school attendance and greater access to resources could rectify many of the problems migrant students encounter.

HCT provides one perspective into understanding difficulties faced by the Latino migrant student population and potential solutions to increase long-term postsecondary and labor market opportunities. However, it does not account for non-economic factors that impact the outcomes of migrant students; other theories can provide understanding beyond HCT. Critical theories address structural oppression of marginalized groups and individuals along various dimensions, such as class, race, and gender (Capper, 1995). Critical theories consider racial/ethnic stereotypes, class differences, and varying worldviews that may be related to particular educational outcomes. More broadly, critical inquiry views reality as subjective and socially constructed on the basis of power dynamics (Sipe & Constable, 1996). Latino migrant workers and their children face a wide range of class, racial, and cultural inequities, such as exploitative migrant labor practices and institutional barriers in educational settings. For instance, studies discussed in the literature review note that teachers may pay less attention to migrant children knowing that they are a mobile population with high rates of absenteeism. Further, a blatant example of systemic failure due to power imbalance is how TMEP programs are not offered in some areas with large migrant populations; migrant students who are eligible cannot receive services. In Texas, about 25% of eligible TMEP students do not participate in the program. Districts that do not provide a TMEP program are essentially preventing TMEP students from accessing the meager assistance that they have been afforded. Yet, in the political realm, migrant education is not a salient issue, as evidenced by budgetary cuts to the federal MEP by Congress (Lynn & Malinowska, 2018). Although MEP students face challenges greater than most students in the United States, they do not receive the adequate assistance they need to thrive.

Giddens' (1973, 1984, & 1991) structuration theory provides an additional framework for understanding low rates of Latino migrant persistence in postsecondary education and high rates of

employment in the agriculture sector. Structuration theory argues that "structure and agency are not separate and opposing entities" (Valadez, 2008 p. 838). Instead, it contends that agents operate within a structure and these structures are internalized in the agents through a dialectical process. Through social interaction, agents necessarily reproduce the structure that guides their behavior. The argument is that structures both inform and constrain people's decisions, which may seem irrational from an outsider's perspective (Valadez, 2008). Latino TMEP students may face social and cultural barriers that prioritize family and financial constraints to higher education. Structuration theory argues that children may be encouraged to help with family needs and dropout of school or join the workforce instead of attending college.

The silver lining of the migrant student experience is that an opportunity exists to dramatically improve educational and economic outcomes for a large number of disadvantaged students. Restructuring the TMEP by evaluating services and providing more resources to expand provisions would allow students to be better prepared for postsecondary education and the workforce. As of now, the HCT does not take into account many barriers to education and services faced by the MEP. The present studies highlight ways in which other theories may supplement these gaps to more accurately predict the long-term outcomes of students.

POLICY RECOMMENDATIONS

Each state determines the type and quality of services provided by their migrant education program. In Texas, services vary substantially by district and school; some offer a comprehensive selection including counseling, test preparation, and distance courses, whereas others districts fail to maintain a program despite a migrant presence. (The Austin Independent School District is a notable example of the latter.) The state should establish consistency across educational entities to ensure that migrants have access to the same set of quality resources regardless of their geographic

location. Evaluation of specific services is necessary to determine which are most effective. Since Texas has the second largest population of MEP students in the US, expansion of funding for the TMEP from the state level could help bridge the current gap that exists. Latino students constitute almost 50% of students in Texas, and assistance for the migrant student population who are made up of 98% Latino students should be emphasized. On a broader level, conducting a deeper evaluation of the MEP in each state with a migrant population is important to adequately evaluate the MEP and attain funding for the program.

Migration may inherently be a cause of unequal outcomes. To counteract this, providing families with a scholarship or a conditional cash transfer in addition to MEP services may raise attendance and school completion. Further, this could subsidize a more stable environment and increase the opportunity cost of migration.

Improving outcomes such as school attendance, K-12 graduation rates, postsecondary persistence, and career attainment is instrumental to providing migrant students with better prospects in life. Increased financial support and access to effective mentorship programs can facilitate positive results. For instance, counseling for migrant students can provide them with information on postsecondary education that help them take advantage of financial assistance programs or encourage them to pursue higher-tier postsecondary schools. Promoting STEM education and STEM career preparation could be a promising strategy to reducing recidivism to agricultural labor.

The migrant student population is arguably the most marginalized group of students in the United States. In addition to structural inequities, language differences, and cultural barriers, these students frequently change schools, live in poverty, and do not have access to knowledge about navigating long-term opportunities. The MEP was developed to correct disadvantages that migrant

students face. Yet, Latino migrant students continue to have lower outcomes than non-migrant Latino students. Resources should meet the needs of the migrant population. A revitalized program with a working budget that provides more effective services may enable migrants to pursue the same opportunities as their non-migrant peers.

IMPLICATIONS FOR FURTHER RESEARCH

This study is one of the first large scale quantitative analyses to consider the Texas Latino migrant student population. There are many opportunities for further research on the Texas migrant student population as well as migrant student experiences across the US. Studies could expand on the findings of this dissertation as well as consider new grounds incorporating qualitative methods.

Expanding on the findings of this dissertation can take many forms. A better understanding of migrant student drop out and graduation rate is needed. Current TEA numbers indicate much higher graduation rates than the data provides, and this may be due to coding of the graduation variable in the graduation file or differences in measurement. Studying causal effects of participating in the TMEP is also necessary to properly evaluate the program. This will require data that indicates whether a student actually participated in the TMEP. Furthermore, future research could also consider differences between migrant outcomes by campus and university. Data could be aggregated at both the campus and university level, and migrant student outcomes such as postsecondary attendance, graduation rates, and level of award could be measured. In order to measure the amount of time a migrant student spent in agricultural industry while controlling for other factors, a survival analysis could be used to perform such an investigation as well as consider data over time. Particularly in order to attain a better estimate of long-term labor outcomes, additional years of data should be requested. This would allow earlier TEA data which could then be merged both with postsecondary and labor outcomes. These research opportunities are just a

sample of the possibilities of the data. This large dataset can provide valuable long-term information on the TMEP.

Other areas of research include investigating the value of specific migrant services, where they are offered, and the impact of services on migrant student performance. It is unclear which schools and districts provide which services and whether they have any benefit for students or their families.

Finally, it would be beneficial to attain data on migrant students who actually are known to participate in the MEP or TMEP. Currently, it is only possible to estimate intent to treat, but not the effect on the treated. In order to fully evaluate the TMEP, a variable flagging participating migrants as well as their time frame would be essential.

CONCLUDING STATEMENT

In correcting for inequities in society, it is especially pertinent to focus on populations that have been overlooked. While US migrant students may have access to the Migrant Education Program, several factors exist that may prevent the program from having a meaningful effect on the long-term outcomes of migrant students. The programs small budget, disparity between services offered between districts and states, and lack of evaluation of services rendered have resulted in migrant students not receiving the assistance that they need. While migrant education is relevant only to a small percentage of U.S. students, it is still a population that deserves equal opportunities. This dissertation aims to estimate some important Latino migrant student outcomes as they are compared to the non-migrant Latino population, provide a step towards TMEP evaluation, and furthermore, highlight the need for assistance for the TMEP population. The TMEP is the one main form of assistance that migrant students receive and may make the difference between migrant

students completing school and entering meaningful work. It is imperative that this program receives the budget and evaluation it needs to fully serve the migrant population.

Appendix

Methodology for Literature Review

The literature review was conducted through searches of online databases including: Sage, Web of Science, Google Scholar, Education Resource Information and Center (ERIC), Proquest Dissertation and Theses, EBSCO, Wiley Online Library, and Chronicle of Higher Education. An additional search was conducted using the University of Texas library catalog in order to acquire published books and manuscripts available in print. The following key words were used in searches for literature: migrant students, guest-worker students, migrant children, migrant workers, US migrant workers, migrant education, Texas migrant (worker) students/children, Migrant Education Program, Texas Migrant Education Program (TMEP), TMEP evaluation, mobility migrant students, achievement migrant students, dropout migrant students, graduation (rates) migrant students (US and Texas), resiliency migrants, migrant chronic absenteeism, STEM, migrant top 10% admission, agricultural worker mobility, agricultural worker education, migrant student immigration status, migrant student college/postsecondary, migrant labor outcomes, Texas migrant postsecondary outcomes, Texas migrant education program labor outcomes, migrant wage outcomes, Latina/o wage labor and wage, first-generation student labor outcomes, first-generation Latina/o labor/wage outcomes, identification and/or recruitment of migrant students, migrant agricultural destinations, changes in the MEP and Texas MEP, Migrant Education Program and Elementary and Secondary Education Act, and other variations. Additionally, exponential non-discriminative snowball sampling was conducted by using bibliographies from articles, dissertations, and books as a guide to further expand the literature base. This literature base includes works cited from 2000 until 2018, although older seminal publications have been included. Searches involving the MEP and TMEP

resulted in the least number of findings and consisted mostly of government publications that discuss program policies and regulations. Therefore, the discussion focuses on program description in order to understand how program factors impact migrant student K-12 and postsecondary outcomes.

DATA CLEANING

First, each of the TEA files for each year (attendance, enrollment, and graduate) were cleaned to remove duplicate student observations and check for inconsistencies for each student for variables including race/ethnicity, immigration status, at-risk of dropping out status, economic disadvantage etc. For each year of the attendance TEA file, data was collapsed according to the following rules: the data was sorted by ID and the total number of days the student was a member at a school, the first incidence of ethnicity and sex reported; the last reported incidence (according to the campus the student spent the most days in) of grade, campus, district, and TMEP eligibility; the sum of days present across all campuses, the sum of days enrolled (present and absent) across all campuses, and the sum of all days absent across all campuses. Maximum was used to determine if the student was ever TMEP eligible, if the student was ever eligible for Bilingual/ESL/LEP, as well as the total number of days a student was TMEP eligible. For enrollment data, the first incidence of ethnicity and sex reported were used; the last reported incidence of grade, campus, district, immigrant, invalid ID1 flag and state assigned flag; Maximum was used to determine if the student was ever TMEP eligible, if the student was ever at risk of dropping out, eligible for LEP, Bilingual, ESL, or economically disadvantaged. For the graduate file, the last incidence of campus, district, student grade level, graduation type, and graduation date were used. The maximum was used for whether the student had college plans or was economically disadvantaged. All files were collapsed by student ID and year. All year files were appended together for attendance, enrollment, and graduation data. Before merging the three file types on ID1 for TEA data, observations with an invalid ID1 flag or missing ID variable were dropped. Data was merged together using ID1 and year for TEA variables. Once data files were merged, variables were created for whether a student was ever and always TMEP eligible, LEP/Bilingual/ESL eligible, at risk of dropping out, or

economically disadvantaged. For race/ethnicity and sex variables, the maximum mode was used for each individual. For students who had multiple race/ethnicity classifications, first, Latino/Hispanic students were accounted for. This was to insure that all students who were considered Hispanic/Latino would be included in the sample. Data was collapsed using maximum mode for economic disadvantage, at risk of dropping out, and race/ethnicity. Then attendance, enrollment, and graduation files were merged on ID1. In 2010, the race and ethnicity definition changed. This change was accounted for by collapsing the code into five dummy race variables: white, Black, Hispanic/Latino, Asian/Pacific Islander, and multiple races. If a student was classified as multiple races and one of those races included Hispanic, then the Hispanic indicator was noted.

For THECB files, files with duplicate observations were collapsed in order to allow for one observation per student. The following rules were used for collapsing university admissions data: The first listed value of ethnicity, sex, admission status (acceptance type), and term to begin were used. The last value of university code (FICE) and type of degree sought were used. The max value of ACT and SAT scores, entering status (college work for level of award sought), age, family income, single parent, parent's education, and number in the household were used. For enrollment data and graduation data, the last and maximum observation for each student were used for variables including degree level obtained, FICE, student classification, STEM major, top 10% admission, first time transfer. Maximum values were used for sex and race/ethnicity. Data was collapsed by ID2 and year.

Data from TEA and THECB were merged on the ID2 variable. One observation per student was kept from TEA data on the last and maximum of each variable. The maximum value was used for migrant status, economic disadvantage, at risk of dropping out, or immigrant status. Last values were used for district or school. Race and ethnicity variables were kept from TEA files. The year

that the was merged for each student from TEA was either the year the student graduated from high school, or the last year they were in TEA data.

For labor market outcomes, quarterly wages were added for each person to form annual wages. Data was sorted by the sector where the worker had earned the highest income and collapsed on the maximum annual wage and the sector were the worker had earned the most, by ID2 and year. A flag was created for workers who were in the agriculture sector and a variable was also generated to note the wage in the agriculture sector.

The maximum or last value for each variable was taken from TEA files that were merged with TWC data, as well as for the combined TEA-THECB files that were merged with TWC data. Data was merged on ID2. In TEA data, the last year of data was kept for TEA and TEA-THECB data, which indicated whether the student had graduated or was last seen enrolled. For TEA/THECB data, graduation was also flagged and the number of years post school was generated. For both data sets, age was also noted.

POST ESTIMATION TABLES

Table 35: Post estimation statistics for TEA data K-12 data for Latino migrant and non-migrant students

	Full Sample	Migrant Students	Non-Migrant Students
	M	M	M
Total days absent	7.51	8.91	7.47
Chronically absent	0.1	0.14	0.09
Early education	0.01	0.01	0.01
Pre-Kindergarten	0.06	0.05	0.06
Kindergarten	0.08	0.07	0.08
Grade 1	0.08	0.08	0.08
Grade 2	0.08	0.08	0.08
Grade 3	0.08	0.07	0.08
Grade 4	0.08	0.07	0.08
Grade 5	0.07	0.07	0.07
Grade 6	0.07	0.07	0.07
Grade 7	0.07	0.08	0.07
Grade 8	0.07	0.08	0.07
Grade 9	0.08	0.09	0.08
Grade 10	0.06	0.07	0.06
Grade 11	0.05	0.06	0.05
Grade 12	0.05	0.05	0.05
Female	0.49	0.48	0.49
English language learner	0.34	0.4	0.34
Economically disadvantaged	0.81	0.97	0.81
At risk of dropping out	0.66	0.79	0.66
Immigrant	0.03	0.05	0.03
N	30,907,536	728,951	30,167,843

Table 36: Post estimation statistics for SAT outcomes at university for undergraduate Latino migrant and non-migrant students

	Full Sample	Migrant Students	Non-Migrant Students
	M	M	M
ACT score	20.09	18.67	20.15
SAT score	961.79	890.27	964.74
Migrant	0.04	-	-
English language learner	0.05	0.07	0.05
Immigrant	0.02	0.03	0.02
Female	0.57	0.58	0.57
Admitted to university through top 10% rule	0.22	0.19	0.22
At risk of dropping out	0.28	0.37	0.27
Economically disadvantaged	0.58	0.94	0.57
Mother's education, Unknown	0.03	0.04	0.02
Mother's education, No high school	0.01	0.02	0.01
Mother's education, High School	0.03	0.02	0.03
Mother's education, College	0.03	0.01	0.03
Mother's education, Graduate	0.01	0	0.01
Father's education, Unknown	0.03	0.04	0.03
Father's education, No high school	0.01	0.02	0.01
Father's education, High School	0.03	0.02	0.03
Father's education, College	0.02	0.01	0.03
Father's education, Graduate	0.01	0	0.01
Single parent household	0.09	0.05	0.09
Family income, Unknown	0.27	0.39	0.26
Family income, Less than $20k	0.15	0.29	0.14
Family income, Between $20k and $80k	0.44	0.32	0.44
N	1,121,989	48,610	1,073,379

Table 37: Post estimation statistics for degree level awarded, in community college for Latino migrant and non-migrant students

	Full Sample	Migrant Students	Non-Migrant Students
	M	M	M
Degree level awarded	0.13	0.16	0.13
Migrant	0.05	-	-
English language learner	0.09	0.14	0.09
Immigrant	0.02	0.03	0.02
Sex	0.57	0.57	0.57
STEM major	0.28	0.35	0.28
At-risk of dropping out	0.48	0.58	0.48
Economically disadvantaged	0.66	0.94	0.64
N	2,765,552	135,303	2,630,249

Table 38: Post estimation statistics for degree level awarded at career/technical school for Latino migrant and non-migrant students

	Full Sample	Migrant Students	Non-Migrant Students
	M	M	M
Degree level awarded	0.82	0.73	0.83
Migrant indicator	0.04	-	-
English language learner	0.13	0.19	0.12
Immigrant	0.02	0.03	0.02
Sex	0.62	0.63	0.62
STEM	0.22	0.24	0.21
At risk of dropping out	0.70	0.76	0.70
Economically disadvantaged	0.74	0.96	0.73
N	204,327	9,098	195,229

Table 39: Post estimation statistics for degree level awarded at university for Latino migrant and non-migrant students

	Full Sample	Migrant Students	Non-Migrant Students
	M	M	M
Degree level awarded	0.99	0.86	1.00
Migrant indicator	0.05	-	-
English language learner	0.05	0.09	0.05
Immigrant	0.02	0.03	0.02
Sex	0.57	0.58	0.57
STEM	0.34	0.33	0.34
Top 10% Admission	0.14	0.11	0.14
At risk of dropping out	0.30	0.41	0.29
Economically disadvantaged	0.59	0.94	0.57
Mother's education, Unknown	0.13	0.21	0.12
Mother's education, No High School	0.03	0.05	0.03
Mother's education, High School	0.07	0.07	0.07
Mother's education, College	0.08	0.03	0.08
Mother's education, Graduate	0.01	0	0.01
Father's education, Unknown	0.13	0.21	0.13
Father's education, No High School	0.04	0.06	0.04
Father's education, High School	0.08	0.07	0.08
Father's education, College	0.07	0.02	0.07
Father's education, Graduate	0.01	0	0.01
N	1,498,964	69,595	1,429,369

Table 40: Post estimation statistics for STEM major choice for undergraduate university Latino migrant and non-migrant students

	Full Sample	Migrant Students	Non-Migrant Students
	M	M	M
STEM	0.27	0.31	0.26
Migrant	0.05	-	-
English language learner	0.08	0.12	0.07
Economically disadvantaged	0.63	0.94	0.62
At-risk of dropping out	0.42	0.52	0.42
Immigrant	0.02	0.03	0.02
Sex	0.57	0.57	0.57
Chronically absent	0.21	0.29	0.21
ACT scores	8.36	12.79	8.16
SAT scores	596.77	319.5	609.59
Mother's education, Unknown	0.02	0.03	0.02
Mother's education, No High School	0.01	0.01	0.01
Mother's education, High School	0.02	0.02	0.02
Mother's education, College	0.02	0.01	0.02
Mother's education, Graduate	0	0	0
Father's education, Unknown	0.02	0.03	0.02
Father's education, No High School	0.01	0.01	0.01
Father's education, High School	0.02	0.02	0.02
Father's education, College	0.02	0	0.02
Father's education, Graduate	0	0	0
Single parent household	0.07	0.04	0.07
N	3,911,075	185,250	3,725,825

Table 41: Post estimation statistics for TEA-TWC data for Latino migrant and non-migrant students

	Full Sample	Migrant Students	Non-Migrant Students
	M	M	M
Agricultural employment	0.01	0.05	0.01
Migrant indicator	0.06	-	-
Graduated	0.66	0.62	0.67
Chronic absenteeism	0.4	0.5	0.4
At risk of dropping out	0.64	0.75	0.64
Economically disadvantaged	0.71	0.94	0.7
English language learner	0.14	0.23	0.13
Sex	0.48	0.45	0.49
Immigrant	0.02	0.03	0.02
N	11,111,749	645,256	1,0466,493

Table 42: Post estimation statistics for TEA-TWC wage data for Latino migrant and non-migrant students

	Full Sample	Migrant Students	Non-Migrant Students
	M	M	M
Log(wages)	8.84	8.73	8.85
Migrant	0.06	-	-
Age	21.52	21.41	21.53
Age^2	476.26	471.21	476.55
Number of years after high school	6.50	6.32	6.51
Chronically absent	0.40	0.50	0.40
At risk of dropping out	0.64	0.75	0.64
Economically disadvantaged	0.71	0.94	0.70
English language learner	0.14	0.23	0.13
Female	0.48	0.45	0.49
Immigrant	0.02	0.03	0.02
Career sector, Transport	0.01	0.01	0.01
Career sector, Wholesale/Retail	0.24	0.21	0.25
Career sector, Professional science/tech services	0.03	0.02	0.03
Career sector, Real estate	0.01	0.01	0.01
Career sector, Insurance	0.01	0.01	0.01
Career sector, Finance	0.03	0.02	0.03
Career sector, Telecommunications	0.01	0.01	0.01
Career sector, Movie/audio production	0.01	0	0.01
Career sector, Publishing	0.01	0	0.01
Career sector, Amusement and recreation	0.02	0.01	0.02
Career sector, Social services	0.02	0.02	0.02
Career sector, Health care	0.07	0.08	0.07
Career sector, Education	0.04	0.04	0.04
Career sector, Hospitality and travel	0.01	0.01	0.01
Career sector, Personal services	0.01	0.01	0.02
Career sector, Public administration	0.02	0.02	0.02
Career sector, Repair and maintenance	0.01	0.01	0.01
Career sector, Construction	0.05	0.08	0.05
Career sector, Manufacturing	0.04	0.05	0.04
Career sector, Administrative support services	0.10	0.10	0.10
Career sector, Food services	0.08	0.08	0.09
Career sector, Agriculture	0.01	0.05	0.01
N	11,111,749	645,256	10,466,493

Note. Any sectors not listed had no participants.

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